MEMORIES OF THE MONTHS

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MEMORIES OF THE MONTHS

THIRD SERIES

THE LADY OF THE LAKE

LONDON: EDWARD ARNOLD 1902.

Memories of the Months

THIRD SERIES

BY THE RIGHT HON.

SIR HERBERT MAXWELL

BART., M.P., F.R.S.

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INTRODUCTION

As the shadows lengthen, the man becomes more and more garrulous. 'La jeunesse à lui reparaît,' quoth Alexandre Dumas, 'apportant tous ces souvenirs suaves, qui sont plutôt des parfums que des pensées.' Courtesy and forbearance on the part of his friends provide him with an audience, nor does he spare them, spinning interminable yarns, sometimes of very indifferent texture.

But he who commits his memories to print cannot reckon on similar indulgence. Good manners may compel attention to an old fellow from his company, but nobody is under any obligation to read what he chooses to write, wherefore nobody has any right to complain if he chooses that silent mode of monologue. What has tempted me to indulge in it again is the agreeable reception accorded to two former series of these 'Memories.' I can but hope that the present volume, filled with what are *plutôt des parfums que des pensées,* may be found in some degree redolent of the greenwood, the hillside and its falling floods, and refresh those who have learned to

draw their purest pleasures from those never-failing sources.

Of the papers which follow, Nos. II., X., XIX., XXVI., and XXVII. have appeared already in *Blackwood's Magazine*, and are republished by kind permission of the proprietor of that venerable periodical.

HERBERT MAXWELL.

Monreith, 1903.

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January

I

During the last session of Parliament (1901) I was asked by a well-known naturalist to move the Home Office to interfere with the wholesale slaughter of crossbills on a certain estate in the north of Scotland. Although I was distressed to hear of the destruction of a beautiful and interesting bird, whereof the splendid flame colour on head and breast fades, sooner or later, after death to a greenish ashen hue, I felt unable to comply with my friend's request by reason, first, that the Home Office does not interfere in Scottish local government; and, second, that the Wild Birds Preservation Act of 1894 was specially designed to commit to County Councils the responsibility for protecting such species as the interests and special features of different districts rendered it desirable to encourage. But knowing the owner of the estate in question to be a genuine lover of nature, little likely to sanction, still less to direct, the persecution of any wild creature without good reason, I took occasion to ask him the reason for the killing of the crossbills. He gave one to which it was not easy to demur. The owner of extensive fir woods, he has set himself to intelligent and economic management of the same, and is most naturally anxious to avail himself of

The sad plight of British Forestry

natural regeneration—that is, the growth of self-sown seedlings upon ground where ripe timber has been felled. To ensure this, which is far the most economic method of securing a fresh crop, a plentiful supply of natural seed is essential; and that, in the case of pine woods, is precisely what flocks of crossbills prevent. They split the cones with their powerful beaks, devour the seeds, and defeat the object of the forester. If the choice were proved to lie between pine forest and crossbills, most people would give their vote in support of the pines, as contributing more to both the beauty and wealth of the district; but in fact the case for the pines is stronger than that, for it is the presence of pines that attracts these large flocks of crossbills. It comes to this, therefore, that if you do not reduce the number of your crossbills, you must do without natural pine forest; and if you do not have extensive pine forest you will have no crossbills, for they will go to other lands where their favourite diet can be had in plenty. Troublesome as crossbills are, their presence with us in larger numbers than formerly is a gratifying proof of the extent to which reafforestation has made headway in the Highlands during the last half-century. Of all the counties of the United Kingdom, Inverness-shire now contains the largest extent of woodland, 150,929 acres; at the beginning of last century there were few more treeless wastes.

Still more gratifying is the start which has been made in the north by applying scientific system to forestry. Too long has the old, wasteful, hand-to-mouth, rule-of-thumb manner prevailed; not a moment too soon have some Highland landowners awakened to the increasing value of home timber, and have begun to recognise

forestry as farming on a large scale. It requires, however, more than common prescience to adopt a revolution in a system of cultivation wherein the rotation of crops must be measured, not by seasons, but by centuries.

In 1887 Sir John Lubbock's Select Committee of the House of Commons pronounced British woodland management to be capable of material improvement, and reported themselves as satisfied that a considerable proportion of the foreign timber imported might be grown at home under a more skilful system. These imports at that time were reckoned at the value of £16,000,000, exclusive of forest products other than timber to the value of £14,000,000. Their value had increased to upwards of £21,000,000 in 1899, whereof £5,000,000 was paid for rough-hewn logs, and £16,000,000 for sawn timber. The latter import consisted nearly entirely of pine or fir from the Baltic, Scandinavia, and Canada, and there exists no physical reason why every foot of this should not have been grown on British soil had it been the will of our people to do so. Of course there remains the economic question, whether British land is not or cannot be turned to more directly profitable account than in timber-growing. Of the 16,000,000 acres which the Select Committee reported as being waste land, producing no crop of any kind, a great deal yields a fine rent for sporting purposes. Many a Highland proprietor derives a larger annual revenue by letting his land as a deer forest than if it were covered with trees managed on business principles. But that may not always be the case; indeed, a great deal of these 16,000,000 acres is of little or no value for sporting purposes, especially in Ireland; and Mr. Nisbet, in his recent admirable contribution to the Haddon Hall Library

Our Forests and Woodlands,[1] has shown good cause for reflection whether, both from a private and a national point of view, the time has not come to found a new source of wealth by the proper treatment of waste land which is neither deer forest nor grouse moor. Pointing to the enormous and rapid development of the United States and of Germany in timber-consuming industry, he regards the recent rapid rise in the price of timber as no temporary fluctuation. The visible supply of timber in the world has been diminishing for many years; the demands upon it have been constantly increasing. What must be the not remote result?

'Briefly stated (says Mr. Nisbet) the economic conditions now already obtaining, and practically certain soon to become greatly accentuated, are such that the present sources of supply throughout the world are just able to meet the existing demand. But the demand seems certain to increase, and such enhancement can only be met by working out timber from backwoods and remote tracts which are at present unremunerative. Hence a general rise in prices throughout Scandinavia, Russia, and Canada must be the direct result of competition between Britain, America, and Germany.'

It is quite true that in some timber-producing countries the State has interfered to ensure judicious reafforestation, and in others, such as Western Australia and Queensland, private commercial foresight has made provision against reckless denudation; but the restoration of felled wood is a process which cannot be hurried; the average time required for timber crops to mature leaves very little change out of a century. On favourable soil and in good exposure Scots fir and larch may be most profitably

[1] London: J. M. Dent and Co., 1900.

cleared at about eighty years' growth; but heavy sacrifice of capital is incurred if the final fall of oak is made before it is 120 or 140 years old. If Mr. Nisbet be correct in his forecast—and his experience of forestry in many countries entitles his opinion to respectful attention—demand must have overtaken the supply before many years have past.

In view of the approach of this crisis, it is natural to inquire what preparation is being made at home to meet it, and what part existing British woodlands are capable of bearing to meet the requirements of the timber market. Now, among the many sharp lessons we have learned from the competition of foreign produce none has been more ruthlessly rubbed in than this, that the first conditions of profitable trade in open markets are regularity of supply and uniformity of quality. Nobody who has followed the course of the dairy industry in Britain and Ireland—who has marked, first, the overwhelming success of Danish and French butter, manufactured with scientific precision and delivered with organised punctuality, and, second, the marked revival of the home industry in consequence of the adoption of a better system—can want a clearer illustration of this principle. To how many estates in the British Islands can one point as supplying, or being capable of supplying, the timber trade on these terms? Positively the only ones known to me are some of the vast Highland woodlands: they are scientifically managed, and will some day be ready to put timber regularly and of uniform quality on the market. But that day is not yet; a very small proportion of the crop is ripe, or even nearly ripe.

The woodland of the United Kingdom extends to a little

over three million acres. Most people go through life with a very vague impression about the extent of an acre; none but trained minds can apprehend what is meant by a million. Perhaps the most vivid way of explaining the present extent of British and Irish woodland is to state that, were it all united in a continuous mass, it would cover with 'a boundless contiguity of shade' the entire counties of Oxford, Worcester, Warwick, Leicester, Northampton, and Nottingham. Those three million acres would by no means suffice, even had they received for one hundred years past the most skilful management, for the present requirements of the home timber market; but Mr. Nisbet reckons that they might have been made to meet one-third of the demand now supplied by the foreigner.

'If our three million acres of woodlands were trebled in extent' (says he), 'and were all managed on business principles, in place of being under uneconomic management as game coverts and pleasure-grounds, as is now mostly the case with British forests, this would merely be able to supply existing requirements, and no more. Nay, even if we had twelve million acres under forest, and all under the best of management, they would probably be just about able to supply the demand for timber likely to exist at the time plantations now formed may become mature.'

That is to say, in from one to two hundred years! It is obvious that a forecast at such long range must be understood with 'errors excepted'; but then—no forecast, no forestry. To forecast the general value of timber a hundred years hence is hazardous indeed; still more so to predict what trees it will then prove to have been most worth planting now. It so happens that, at the present

time, the native timber which meets with the readiest sale in Scotland, and at the highest price, is that of sycamore. Writers in the first half of last century set small store by it. 'The timber of our sycamore,' wrote Cobbett, 'is white and soft, and not valuable by any means.' But it is now in so much request by calico printers and, I believe, carpet manufacturers that bolls measuring twelve inches on the square readily fetch from 2s. 6d. to 5s. a foot, according to distance from a railway or harbour. On the other hand the demand and price for poplar, so much in request for railway wagons fifty years ago, have fallen off considerably. Still, in spite of these changes in value, it is hard to conceive any stage of civilisation when the timber of mature oak, ash, elm, Scots fir and larch will fail to command a remunerative price.

When we turn to consider the general quality of the timber grown in our three million acres of woodland, the prospect is even more discouraging than the deficiency in extent. The average English landowner knows nothing of economic forestry; but he knows all that is to be known about shooting; he has also a fine taste for great trees, which it is only dire necessity can induce him to sacrifice. Now the combination of these two motives—desire for game and pride in great trees—has wrought the ruin of English woodland from the forester's point of view. Clean, long stems, such as one may see in the well-managed Forêt de Blois, or, still more admirable, in the fine oak wood between Blois and Cour-Cheverny, are incompatible, except on soils of exceptional character, with thick undercover for game, because they can only be obtained by growing trees so close together as to

sustain an unbroken canopy of foliage until they have attained their full height. This exclusion of sunlight, necessary to prevent the formation of side branches, is inimical to the growth of most plants producing undercover. Except on the most generous soils, the floor of a wood so treated is apt to become as bare as that of a barn. This is of less importance nowadays, one would suppose, because of the intensely artificial character which cover-shooting has been made to assume; indeed, hurdles and made-up stick shelters are often placed at such places where it is desired to have a rise of pheasants, and to the guns placed outside the wood it can matter very little whether the birds rise from a natural brake or from a makeshift.

But a rightly managed woodland, bearing a proper rotation of crop, will contain trees in all stages of growth, including breadths from five to twenty years planted, than which there is no kind of cover more beloved of game. Here I make no reference to copse, the subject of anxiety being the supply of *mature timber*, not forest products in general. In the attempt to make every wood a pheasant cover, landowners have got into the habit of unmerciful thinning, leaving trees so far apart as to throw out side limbs instead of building up stems. Great must be the bewilderment of a German forester, scientifically trained and of ripe experience, when he sees for the first time a typical English woodland, managed, it must seem to him, purposely to prevent the formation of clean timber, and the trees encouraged to form great spreading heads as if for orchard purposes.

If the quality of the timber produced be unsatisfactory compared with that from Continental forests, still more

prohibitive to profitable trading is the uncertain and intermittent nature of the supply. An English timber merchant knows exactly what he wants, and can be sure of getting it through his Continental agents; but it is all a matter of chance what he could get in any season out of the three million acres at his door, so to speak. Sentiment, love of landscape, solicitude for game, all render landowners in this country very half-hearted in getting the most out of their woods. A few weeks ago I was staying at a fine historic castle in the Midlands. The far-reaching park was rich with glorious masses of woodland, just verging on the turn of the leaf. The prospect from the lofty terrace was enchanting, and I gladly accepted my host's invitation to take a turn with him through his trees. Alas! nearer acquaintance with them revealed an innumerable series of might-have-beens. The soil is generous, the varied fall of the ground just what affords foundation for the noblest forest; all that has been lacking is the directing mind of man. Lavish, unrestrained growth in every direction; traces of arbitrary unequal felling; in the blank spaces headlong jungle of seedlings and saplings crowded in a mutually wasteful struggle for existence.

We passed through an extensive wood which had once consisted mainly of oaks, clothing the northern declivity of the hill whereon the castle stands. These oaks have been grown well and sufficiently close to draw them up to a great height, thus taking full advantage of the good soil and propitious shelter; they averaged about eighty feet in height, with noble clean stems, some forty or fifty feet without a branch, and seemed to be about two hundred years old. Assuming that the wood consisted of about fifty acres,

there could not have been less than 9000 or 10,000 cubic feet of sound oak timber per acre (according to the reduced British measurement of square-of-quarter girth) when this oak crop reached maturity fifty years ago. At 1s. per foot this represents a value of £22,500 or £25,000. The greater part of this value has been sacrificed in the supposed interest of the landscape. Ten or fifteen years ago the oaks were suddenly and severely thinned, by way of improving the beauty of the wood; and the admission of light has brought up a strong growth of ash and beech saplings, with other undergrowth, among which have been planted a number of what are usually classed as ornamental *coniferæ*, but which in such a scene are simply so many eyesores. So far from the beauty of this fine woodland being enhanced by what has been done, it has been ruined. My host pointed out with much concern that the oaks were failing. His forester, had he known the rudiments of his business, when he was directed to change the close oak wood into an open one should have warned his employer that the trees left standing were bound to fail. The inevitable result of suddenly isolating an oak which has been grown to middle age or maturity in close highwood is that an eruption of twigs and branchlets springs from the trunk and from the branches below the crown; the tree becomes 'stag-headed,' and the timber is greatly spoilt. That is exactly what has happened in the wood I am describing. These oaks have passed their best; they could not have improved even had they been let alone; treated as they have been, they are past praying for, and the rest of their existence must be a long-drawn process of decay, diversified with random and morbid growth.

Now, so great is the prejudice of English landowners against treating woodland commercially, and so great their affection for individual trees, that had I spoken the thought in my mind my host had dubbed me a miserly, bawbee-hunting Scot. So I held my peace. None the less am I convinced that the proper treatment of these remaining oaks is to fell and sell them, to make way for a fresh crop. There seemed to be about thirty of these lofty oaks left upon each of the fifty acres. At present prices these clean-grown stems cannot be worth less than £7, 10s. a piece as they stand. The aggregate value, therefore, of the whole wood still amounts to £11,300.[1]

Here was a typical instance of the condition of things on many estates. The owner is generally devoted to his trees, and regards it as sacrilege to treat them as a crop. He takes pride in what he believes to be judicious thinning, which is nearly always thinning carried to an injudicious extent, so as to induce a maximum of great limbs and a minimum of clean stem. He dabbles in arboriculture, but is ignorant of the principles of forestry,[2] with the result that what might have been a valuable and productive woodland is turned into a mixture of arboretum, pleasure-ground, and game preserve, which seldom covers the expense of keeping, still less yields any equivalent to the agricultural rent of the land. It is picturesque, indeed, and full of delightful combina-

[1] I have purposely made this calculation extremely low. It is a fact that my friend showed me where one of these oaks on the outskirt of the wood had been recently felled, and the timber thereof sold for £20.

[2] The two crafts are very different from each other, yet the terms are often treated as synonymous. It is ominous of this misconception that the chief organisation for promoting forestry in Scotland should be called the Scottish *Arboricultural* Society.

tions of form and colour, light and shade. To an artist it may furnish more subjects than a well-ordered forest; but then an artist will prefer a weedy, poorly cultivated wheat-field for his foreground to a heavy level crop. That does not save the poor, dirty crop from being a reproach to all concerned in growing it. The artist is best pleased with straggling, irregular woodland; but it does not require a merely commercial intellect to be conscious of the peculiar beauty of well-managed forest. The eye rejoices in the vigour and symmetry of the trees; the imagination is stirred by the long vistas of shade and mystery; the mind is gratified by the evidence of applied knowledge and skill; all three derive pleasure from the evidence of human presence and energy in the regular and beautiful operations of forestry. Here and there the rein may be given to the purely picturesque. Round the mansion-house, by the river, or in the park proper are the right places for trees to develop their characteristic forms unhampered by others, to assume venerable proportions, and to linger out long ages of decay and grotesque distortion. Such are the proper places for arboriculture as distinct from forestry. It would be very far to misjudge my purpose if this were read as intended to interfere with English park scenery. My contention is that the right management of woodland is something quite distinct from landscape gardening and conscious effort at effect. Beautiful effects are inevitable in all places where trees abound, no matter how they are grown. Advantage may be taken of the presence of woods to form the middle distance or horizon in park scenery; they will serve that decorative purpose every whit as well if, instead of being wastefully and wrongfully

grown as at present, they are managed as a regular source of revenue.

More than that, if woodland can be rendered not only regularly remunerative, but a reserve that can be drawn upon in times of special pecuniary pressure, it might prove the very means of preserving that liberal park scenery whereof Englishmen are so justly proud. The King who never said a foolish thing, and never did a wise one, is reported to have described trees as natural excrescences of the earth supplied by Providence for the redemption of needy landowners. English landowners, as a class, perhaps cannot be pronounced needy—at least compared with the same class in many Continental countries, and having regard to their scale of living—but they are very much less affluent than they were thirty years ago. Rents have fallen from thirty to fifty per cent.; in some districts even more; and the loss falls entirely on the free income of the landowner, for expenses of management and upkeep go on as before, and rates have risen by leaps and bounds. In addition to all this, the new death-duties have to be faced: two or three successions at short intervals would render most landed estates of moderate size insolvent, or, at all events, bring them to the hammer. The pride of English parks—of all other prides the most innocently ostentatious and extravagant, and yet the least selfish, seeing what enjoyment these parks afford to wayfarers and tourists—is seriously threatened. Is it not culpable blindness which restrains their owners from turning to account an obvious source of revenue, and providing the means of meeting sudden drafts upon the capital of the estate which maintains the park?

The forests of Belgium cover 1,750,000 acres, and yield a return of £4,000,000 sterling a year. The existing 3,000,000 acres of woodland in Great Britain and Ireland, if under management equally skilful and careful as the Belgian, ought to give £7,000,000 a year. What is the income from them? Who can tell?

The prospect is not reassuring if we turn to the State woodlands for instruction in profitable management. Our greatest national forest—the New Forest—contains 63,000 acres, whereof Parliament has decreed (by the Act of 1877) that 46,000 acres shall be kept for ever, in the words of Mr. Lascelles, as 'a vast pleasure-ground, combined with a cattle-farm.' He pays it too high a compliment. The 'cattle-farm' is nothing but miserably poor pasture, grazed in common. There are also 17,600 acres of thriving wood, planted before sentiment prevailed over common-sense, and 4600 acres of decaying wood, for which sentiment will not allow common-sense to provide the necessary regeneration.

In very few of the other State forests—even in those like the 25,000 acres of the Forest of Dean, where wood is grown and cut to supply the market—do the returns meet the expenditure, let alone paying the rent of the land. There is no net income, but a deficit; and the same is undoubtedly the case in regard to the woodland upon nineteen estates out of twenty in the United Kingdom.

If I am acquitted of any desire to interfere with the peculiar character of park scenery, scarcely shall I be suspected of any enmity to field-sports. Yet it would be idle to refuse to recognise that in the list of British field-sports there are two whereof the effect is directly

hostile to good forestry. The first of these is deer-stalking, which is absolutely incompatible with any young wood whatever upon certain extensive tracts of waste land; the other is cover-shooting as practised at present, especially if part of the plan be the maintenance of a heavy stock of ground game.

As to deer-stalking, leaving out the islands which are unsuitable for planting, it is only a comparatively small proportion of the counties of Caithness, Sutherland, Ross and Cromarty, Inverness, Perth, Argyll, Forfar, Aberdeen, and Bute which is devoted to deer. These counties amount in aggregate of acres to about eleven millions and a half, whereof about 424,170 are under woodland and 2,000,000 acres are deer forest.

Trees cannot be grown profitably in the latitude and climate of Northern Scotland at a greater elevation than 1500 feet; much of the deer ground lies above this level; and of that which lies below it there is a great deal like the Moor of Rannoch and the Caithness wastes which, although it undoubtedly bore continuous forest at one time, is now sour, deep moss, and would require herculean preparation and drainage before it could be induced to do so again. Therefore, before the reformer casts covetous eyes on the deer forests of the north, a beginning ought to be made upon the great waste lands which carry no deer. Consider, for example, that great tract of moor and mountain which constitutes the southern uplands of Scotland. It extends from the Lammermuirs on the east, across the counties of Peebles and Lanark, skirts the great Ayrshire coalfield, and rises to its greatest height—2764 feet—in the Kells range, between Loch Doon and the Solway. Practically the whole of this great territory is

under sheep farms, which for the last quarter of a century have been such a precarious industry that landlords have been at their wits'-end to let the ground at half or a quarter the former rent. Much, very much, of this land is in an excellent condition for planting. Shreds of the great forest it once bore may still be seen clinging to the sides of 'cleuchs' in upper Nithsdale, and nestling in the glens of Galloway. Wherever, in short, there is shelter from the winter gales, whereof the force was once broken by the mass of forest, but which now sweep across the bare land with unmitigated fury, and wherever the ground is so steep as to keep off the axe of covetous man and the teeth of browsing sheep, there still is a spontaneous growth of oak, ash, wych-elm, and—that sure index of good woodland soil—holly. Nothing is being done towards reafforesting this great district. The fact is that most landowners have no capital to lock up in planting until woodland begins to make a return; those that could afford to do so either prefer a quicker return or distrust the probability of any return from an industry which shows such a bad record in the past as British forestry.

When a man invests his capital in a farm, he sets to work to cultivate it according to certain well-established rules of good husbandry; he employs men experienced in carrying these rules into effect, and he can obtain advice from a department of the Government. There is a practical code of British husbandry and stock-rearing, and there are agricultural societies in every county of the realm to encourage and instruct individual effort. Nothing of the kind exists in British forestry. Our abundant coal supply has enabled us to become indifferent to wood fuel; our wealth puts the timber of every part

of the globe at our disposal. Here and there a few careful landowners have borrowed from foreign countries and put in practice the rules of good forestry, but by far the larger proportion of British woods are run on amateur lines, modified by local custom. Nor is the experience of British State forests such as to encourage one to look to Government to acquire and plant land. At present one must be content, I suppose, to state the facts of the case which are these: the land is to be had at a low rate of purchase for the asking; it requires no fencing, for a sheep farm may be planted from end to end, at least on the suitable parts of it; there is every prospect of a continuous rise in the price of timber, and a probability that the country will be in dire straits for a supply before trees now planted shall have grown to a size to meet it.

It is no use discussing a project of this long-range character without entering upon details. Let me do so as briefly as possible.

Suppose that Parliament could be persuaded to vote a sum of £10,000 a year for the purchase and planting of suitable land. There are tens of thousands of acres now offered for sale in Scotland, producing an annual rent of not more than two shillings an acre as sheep pasture, of indifferent or no merit as grouse ground, but very suitable for growing timber. Thirty years' purchase—a liberal price, as times go—would secure 1000 such acres for £3000. Planting this at three feet by three (probably the most profitable distance on level ground, although many planters save expense by placing the trees four feet apart)[1] will require 4,840,000 trees for the 1000 acres (it

[1] I have submitted a case where planting is necessary, but there is much ground where the soil will respond readily to the infinitely cheaper

will take one-third or one-half less on sloping ground), and will cost about £6 an acre=£6000.[1] Here we have an immediate initial outlay of £9000, supposing the whole area to be planted at once; but it might be found expedient to spread the planting over five or even ten years, so as to secure a successional period of maturity, if the same kinds of trees are used on the whole of the ground. The balance of the £10,000 voted, £1000 invested at 3 per cent., would pay the annual tool bill, in addition to which an annual charge must be reckoned upon:

Head forester	£120
Four woodmen at £60	240[2]
Repairs and buildings	100
	£460

or say £500 a year. Shall we be able to meet this charge, receive interest on the capital sunk, and find our capital in hand at the end of the century? We ought to do so, if the statistics of commercially managed woods on the Continent are trustworthy, for we intend to manage this forest on stringently economic principles, not planting oak here to please somebody's fancy, nor fir there because it will look romantic. We shall not even be guided in choice of trees by the highest prices current at the moment for different species, but we shall suit our crop to soil and situation, so as to grow the maximum weight of timber whereof every acre is capable.

For the first ten years no return can be expected from

method of dibbling seed. A sown crop gives a far more liberal return in thinnings than a planted one.

[1] No provision is made in this for fencing, which would not be required where a whole farm is to be planted.

[2] A larger number of woodmen will be required on 1000 acres after ten years, but by that time the forest will have begun to return some revenue.

the plantation; therefore the capital of £9000 originally sunk will have increased in that time at 4 per cent. compound interest to £13,322, 3s. 6d. In order to receive 4 per cent. upon this money, and to defray the annual expense of £500, we must make a net profit of £1033 a year off our 1000 acres. Between ten and fifteen years thinnings will be worth little except for fencing purposes, and cannot be reckoned on as doing more than covering the expense of cutting and removal. From fifteen years onwards the income will steadily increase, beginning with pit-props, for which there is an almost insatiable demand in this country, proceeding to the medium-sized trees removed in judicious thinning, until the period of commercial maturity, which in the case of Scots fir and larch should be at about eighty years, when the regular falls will begin.

'I venture (says Mr. Nisbet) to say that an anticipation of seventy-five cubic feet per acre is quite justifiable as an average annual yield. Often much over a hundred cubic feet in actual solid contents, and therefore still considerably in excess of seventy-five cubic feet, even if all be reduced to correspond with the customary British (square-of-quarter girth) measurement, which makes an allowance of 21½ per cent. for wastage in conversion, is not an unusual yield for conifer crops on good soil.'

It is not quite clear whether Mr. Nisbet claims that the 'average annual yield' is to be held to include the first ten unproductive years, or whether it is applicable only to an established woodland in full working order. But if the German returns, upon which he founds, mean anything, they include such portions of an established woodland as have been cleared in rotation, and are under seedlings or young planting.

Taking prices at the improbably low figure of 6d. a foot, 1000 acres, yielding an annual average of seventy-five cubic feet per acre, will give a gross return of £1875, 5s., or 37s. 6d. an acre from land which, as sheep pasture, yielded a rent of 2s. an acre, or £100 for 1000 acres. The average balance-sheet would appear as follows, subject to a slight additional charge for insurance.

Expenditure.		Receipts.	
Interest at 4 per cent. on capital £13,332	£532 18	Sale of 75 cubic feet per acre at 6d. on 1000 acres . .	£1875 5
Average annual expenses . . .	500 0		
Net profit . .	842 7		
	£1875 5		£1875 5

If no more than £10,000 were voted annually for the next fifty years the State would have made a progressive investment of half a million—*about the cost of four days' war against the Boers*—and earned a gross revenue of £93,750, supposing the price of timber fifty years hence at no more than 6d. a foot. The experiment would seem to be worth trying.

It will occur at once to any one acquainted with the vicissitudes of woodland that no account has been taken of the effect of forest fires and gales. One reply to that objection is that agricultural owners provide against fire, and shipowners against loss from gales, by insurance, and that there is margin enough in the estimated income either to pay an adequate premium to an insurance company, or, as many large shipping companies do, maintain an independent casualty fund by annual payments. But there is a further consideration. As regards fire, undoubtedly coniferous woods must always be liable

to conflagration, but such is not the case with plantations of hard wood—oak, ash, and the like—especially in a climate like ours, which is always humid while the trees are in their winter repose. And as regards gales, it must be observed that much of the havoc wrought from time to time by exceptional storms is owing partly to our practice of planting narrow belts and isolated clumps and partly to the insane degree to which thinning is usually carried. Trees that have been encouraged to spread exaggerated branches, and to carry heads out of all proportion to their height will succumb to a storm that may be lifted harmlessly over a solid block of well-ordered woodland. The force of a gale is greatly aggravated in effect upon the belt and clump system of plantation. A thousand continuous acres of woodland will suffer far less from storm than 1000 acres scattered over an estate of 10,000 acres.

Yet another consideration. It is upon trees that have arrived at or have passed commercial maturity that storms tell with most disastrous effect. Where such trees are preserved for scenic or ornamental effect, they must take their chance; but it is part of the system of economic forestry that trees shall not be suffered to stand after the annual increase of their cubic contents shows a falling off.

Let me illustrate this point from a page in my private record of folly. My first election to Parliament in 1880 was a costly affair; Sir Henry James had not then passed his Act restricting candidates' expenses in proportion to constituencies. A thousand pounds of ready cash would have been a welcome contribution to paying the bill, and that is just about the sum which I was told I could get

for thirty acres or so of Scots fir and larch growing on a remote corner of the estate. I rode up to look at the trees: they were about ninety years old, and better grown than most on our exposed seaboard. Unluckily, it was a lovely autumn day: the wood looked so gracious—a roebuck stood so picturesquely in a sunny glade where the heather was in bloom—the whole scene was so bewitching, that I had not the heart to order its destruction. The trees were spared, but I never stood among them again. The gales of 1882-83 made a clean sweep of that wood, and I had to content myself with £100 for the wreck.

One effect of the establishment of well-directed State forests, indirect, but exceedingly important both in a national and individual point of view, would be the creation of a standard of management; a model of good forestry which would speedily effect a revolution upon private estates. At the present time there is no such standard or model, if it be not in the far north, among the splendid woodlands of some of our great Highland proprietors. It is possible now to obtain from these estates well-trained, experienced men; but most landowners elsewhere show disinclination to pay them in proportion to their attainments. Mr. Nisbet quotes the case of a landowner who turns upwards of £1000 a year from his woods, and pays his forester 15s. a week! Of course, this is a highly exceptional case. Few landowners receive any profit from their woods at all; the balance of the account is generally far the other way; but those who do manage to make the ends more than meet will not hesitate to pay well for a competent man.

Further, the establishment by the State of the forestry

industry on a business footing would in time set up a regular trade in home timber. It is no exaggeration to say that no such regular trade exists at the present time. Merchants, although willing to offer for home timber when it is offered them, rely for the bulk of their supplies from abroad—from countries where they can be perfectly sure of getting the exact quantity and quality that they want. At home there is no approach to regularity or certainty of supply, still less to uniformity in quantity. Trees subjected to excessive thinning—to arboricultural instead of forestal treatment—throw out innumerable branches: each branch means a knot in the wood, and the timber produced must be coarse and irregular. This must continue to be so unless and until a considerable area in the United Kingdom is under regular rotation of timber crop. To quote Mr. Nisbet once more: 'Available markets cannot be utilised to the best advantage if the quantity of wood offered one year is large, the next year small, a third year wanting altogether, and so on irregularly. "First a hunger then a burst" is bad in this as in all other cases.'

Lastly, the social effect of establishing a healthy industry like forestry in a thinly populated region is not to be overlooked. From every quarter of the realm comes the lament that the sons of the soil are flocking into the great towns. Give them steady and attractive employment, lodge them comfortably, pay them liberally, and plenty of men will remain on the land, as is proved by the fact that there is never the slightest difficulty in obtaining men as gamekeepers, gardeners, stalkers, and gillies in the most remote parts of the country. Where a couple of shepherds now suffice for the care of sheep

on 1000 acres, five or six men will find employment on a similar extent of woodland.

I cannot close this paper—too long already—without a parting reference to the game question. If it be the case, as I believe it is, that the very existence of landed property, as we have known and enjoyed it, is threatened by the operation of the death-duties, surely it is high time for proprietors to turn to the best account the resources of their estates. It will be admitted that, speaking generally, woodland is an undeveloped source of revenue. I have endeavoured to show that this great source of wealth may be developed without sacrificing either the interests of sport or the peculiar beauty of parks. But there is one creature figuring largely in bags of game, whereof the presence is everlastingly incompatible with remunerative forestry—the rabbit, to wit. Let the greater excommunication be pronounced upon this most destructive and almost irrepressible pest. Just as Philip the Second sentenced the whole of the people of the Netherlands to death, so let us issue a mortal ban upon rabbits, but with this important difference, that, whereas Philip's decree fell short of complete execution, ours ought to be carried to the uttermost effect.

'But,' I hear somebody grumble, 'is not this an interference with legitimate sport? Rabbit-shooting is capital fun, and you propose to put an end to it.' Well, people who want to enjoy rabbit-shooting must do so by enclosing warrens, otherwise we must do without profitable woodland. No landowner who has had the courage and taken the pains to calculate honestly what rabbit-shooting costs him will be disposed to differ with

this, *provided the calculation is honest and founded on full information.* At least, he who does so differ can care little about his woods. Upon ground where even a moderate stock of rabbits exists every piece of new planting must be fenced with wire-netting sunk into the ground. What would this mean upon a woodland where ten acres are felled annually in rotation, and therefore ten acres replanted? Simply an addition to the cost of planting of between £2 and £3 an acre. Wire-netting cannot be erected at less than 6d. a yard; to fence ten acres in an exact square will therefore cost between £20 and £30. But this is not all. Where rabbits abound, seedlings and coppice are destroyed, and the wood cannot be restored by natural regeneration, which, upon suitable soils, serves as the costless substitute for replanting. To the debit of the rabbit account, therefore, must be placed, not only £2 or £3 an acre, the cost of erecting wire-netting, but £6 an acre, the cost of replanting; in other words, an initial tax upon the young wood of from £8 to £9 an acre—£80 or £90 upon ten acres. British forestry, if it is to take the place as an industry to which our soil, climate, and requirements entitle it, must be relieved from this intolerable burden, or else it must remain a monument of mismanagement—a source of marvel to intelligent foreigners at the present time, and the subject of bitter malediction from our grandchildren in the future.

[Since these lines were written the Departmental Committee on Forestry, presided over by Mr. Munro Ferguson, M.P., have issued their report (1902), and strongly recommend, *inter alia*, 'the establishment of at least two large State forests, which shall demonstrate

the most perfect technical and economic developments of the art of forestry.']

II

Midwinter in Thessaly

For downright, resourceless cheerlessness commend me to an oriental town under a visitation of cold, all the business of Eastern architects and upholsterers being to provide protection from heat. I shall not easily forget the misery of arriving in Larissa during the memorable tempest which swept over Greece in January 1893. The previous day had been one of delusive splendour; but, even as we lay basking on the deck of one of those evil little steamers which traverse the Ægean Sea, we beheld a fleecy scud creeping across the sky; then tall clouds piled themselves upon it, flashing lightning from their violent skirts; a bitter north wind swept down from the mountains; lashing rain changed hilly roads into watercourses, and level ones into sloughs of ineffable despond.

To arrive at nightfall at the capital of Thessaly—the granary of Greece—under these circumstances was somewhat depressing; still, the town looked cheerful from a distance, for it was the eve of Friday, the Moslem Sabbath, and every minaret bore its girdle of lamps, twinkling gaily against the dark sky. Worse was to come. Our hotel—the *ξενοδοχεῖον τοῦ* 'Ολυμποῦ, or hostelry of Olympus—bore evidence of the revival of prosperity which annexation to Greece brought to Thessaly in 1881. Formerly a common *khan*, it had been rebuilt, and outwardly, with display of broad white walls and multitudinous green shutters, promised some degree of comfort according to European notions, especially from

the contrast it afforded to the rest of the town, which is mostly mud-built.

Ne crede colori! A more inhospitable retreat for a bitter winter night could hardly have been devised. There was hardly any furniture except beds in the lofty rooms (beds happened to be the only furniture we had brought with us); the only carpets in the house were hung on the walls of a gaunt sitting-room, where all the servants and several idlers from the street were gathered round a small brazier of charcoal; and throughout this large house there was not a single fireplace or stove, all cooking being done at the hotel restaurant in the next street but one. The walls were so thin as to seem, on this blustery night, as if their sole purpose was to prevent the contents of the rooms being blown into the streets: positively, it was colder indoors than out. To crown all, every corner of the house was pervaded with that stench which of all others is least endurable by civilised nostrils.

However, it was no use showing peevishness under the inevitable; to do so would be in discreditable contrast with the unfailing good-humour of the townspeople of all classes—whether Greeks or Turks. The only thing to do was to keep on every available wrap, and get some dinner at the restaurant. It was fairly warm in the dining-saloon, though everybody, including a party of Greek officers, dined in their greatcoats.

After dinner we were slow in turning out to face the frosty gale, and, preceded by a porter carrying a Chinese lantern, struggled back through filth ankle-deep to the Hotel of Olympus. Without the leading of that kindly light it would hardly have been possible to thread the

miry labyrinth, for gas and electric light were equally unknown in Larissa, and as petroleum lamps were few and very far between, even in the main street, the darkling wayfarer might easily find himself up to his middle in a muck-heap, or heels over head in one of the pits dug for the trees with which the municipality were preparing to adorn the πλατεία or principal square. The old town law, making it penal to move about after dark without a lantern, had lately been repealed; but in fact nearly every one carried a coloured paper lantern for his own safety, and the effect of the dancing lights was very pretty.

An important ceremony awaited us before we got to bed. The kind consideration of the Government at Athens had caused our approach to be announced to the Demarch or Préfet of Larissa by telegram. The message had been sent from Volo before we left that town, but was delivered in Larissa some time after our arrival. The Demarch, much concerned that we had not been received with more attention, came to explain the circumstances. It was, it seems, the Feast of St. John; the telegraph clerk at Larissa was named John; he had been celebrating the festival of his eponymus not wisely, but too well;—in fact—rarest of all misdemeanours in Greece—he had got very drunk. The Demarch was profuse in expressing his chagrin; and his purpose of retribution on the delinquent was translated by our dragoman to the effect that poor John 'would be stopped for one—two months, and perhaps, in the end, thrown away altogether!' We expressed earnest hope that, inasmuch as 'John' was the only man within many miles of Larissa who could transmit or receive telegrams, his doom might be deferred until after our departure from the city.

Things wore a brighter aspect next morning. The rain had stopped: it was as cold as ever, but the wind was busy drying up the streets.

Since the time of which I am writing, the tide of war has swept over the plains of Thessaly, and Larissa has been besieged and captured by the Turks. In 1893 the city was in a very interesting state of transition. For centuries the city and the magnificent province of Thessaly, of which it is the capital, slumbered—and groaned in its slumber—under Turkish misrule, till it was ceded to Greece in 1881 under the Treaty of Berlin. It is the only part of that kingdom where, previous to the war, large landed proprietors were still to be found—scarcely, in sooth, to be found, for most of them, being Turks, had retired to Constantinople, in spite of the inducements which the Greek Government offered them to remain. That enlightened and courageous statesman, Monsieur Tricoupi, recognising the evils of absentee landlordism, was specially conciliatory towards the Moslem subjects of the Greek crown, and the general population of Greeks, Turks, and Jews (there are still about 30,000 Mohammedans in Thessaly) lived together on most amicable terms, though occupying distinct quarters in the towns. But most of the landlords had persisted in departing, content to draw their rents and spend them in the Turkish capital. How matters may stand since the Turkish invasion of 1897 I do not know.

The town of Larissa itself has, as yet, lost little of its oriental character. The Demarch, the Nomarch, and other officials are, of course, Greek, and look back with some regret to the time when, in greater ease and with

less responsibility, they lived in their native provinces. But I found them proud of their fine territory and confident in the future of their town, which they considered certain, when the resources of the country should be further opened up, to become an important trading centre. Already the railway unites it to Volo on the east, where there is a splendid natural harbour (the British squadron of five war-ships was anchored there at the time of our visit), and to Trikala and Kalabak on the west; and there is a movement on foot to carry the line further to the west, across the Turkish frontier through Albania by Janina to the coast opposite Corfu—a route at present wholly closed to travellers on account of Turkish brigandage.

From two points of view this ancient town presents a striking appearance. One of these is at the far end of the bridge which here spans the Peneus, or, as the Turks call it, the Salámvrias. The natives credit the Romans with having built this bridge; but, if that be so, its nine pointed arches indicate a late period of the Byzantine empire for its construction. Viewed from the river-bank, a little below the bridge, the town looks its best, rising from a girdle of lofty poplars with tier upon tier of warm-toned walls, crowned by the cupola and minarets of the principal mosque, and all mirrored in the glassy flood.

To reach the other point of view we must recross the bridge, pausing to watch the town water-carriers laboriously scooping water out of the river, and pouring it into cowhides borne pannier-wise upon half-starved ponies. The apertures of the hides are kept open by bunches of brush, and half the contents of each jarful is spilt over

the patient animal's quarters, as he stands haunch-deep in the river. It takes about half an hour to fill each pair of hides in this archaic way: the loaded beast then climbs painfully up to the town—the water squirting freely from rents and seams in the leather. It is on this primitive method of supply that the entire town of some 10,000 inhabitants depends, for the wells attached to private houses have become deservedly suspect. The water of the Peneus is said to be wholesome; but when, as we saw it, it is swollen with winter floods and as yellow as the Tiber, it was a comfort to reflect that Larissa has store of sound, if not particularly palatable, wine. Moreover, it is hardly reassuring to observe that a gigantic muck-heap, where all the refuse of the town is cast—the happy hunting-ground of innumerable dogs, poultry, magpies, and pert little Eastern jackdaws—occupies about an acre and a half of the river-bank immediately *above* where the water-skins are filled.

Pursue we then our way up the principal street, past the bazaar and Turkish *café*, where dozens of wide-breeched, be-fezzed, and be-slippered citizens are drinking coffee, bolting sweetmeats, and sucking away at huge hubble-bubbles. Once into the Turkish quarter and you are back in the middle ages. No wheeled carriage may venture on that fearsome pavement, for Turks always go on horseback; and though the roadway suffices for their quick-footed barbs, you, on foot, must hop from promontory to island, and from island to isthmus in the ocean of filth. Still, you will be tempted to linger here and there; for although the house-walls facing the street are, after oriental fashion, mostly without windows, here and there an open door gives a glimpse into a sunny

court, where ripe oranges and lemons gleam among their rich verdure, and palm-fronds cast flickering shadows across paved garden-paths, and you pass on, wondering what manner of life the men, and most of all, the rarely seen women, pass in these old-world abodes.

Entrance to the mosques is rarely refused to Christians, except on festivals, and it is to the top of the highest minaret in the town that we are bound. The narrow spiral staircase affords no more than head-and-shoulder room; the steps are foul with summer-blown dust, with bones brought in by owls and kites, besides other venerable rubbish; and, after what seems interminable gyration, we emerge upon the airy gallery which encircles the top of the slender tower. It is a crazy perch, for the whole structure sways sensibly in the strong wind, and it seems as if a moderate kick would send the frail parapet clattering down on the tile-roof far below; but, if your head is steady, the view well repays the labour of the ascent. Beneath your feet cluster the flat-roofed houses; here and there a chimney rises, crowned with an immense stork's nest, making one wonder how the domestic economy of the bipeds within the house can be reconciled with that of the bipeds without. From the dusky labyrinth of streets spring twenty-six minarets, like silvery bodkins, besides the one to which we are clinging. Then let your eye travel over the splendid prospect lying beyond the town. Full forty miles the fat plain is spread east and west, and five-and-twenty north and south, with hardly a tree to break the level, save where the peasants' cots cluster round the fortified granges of the landowners. The northern horizon is closed by the massive rampart of mountains which marks the latest shrinkage of Ottoman

rule. It is a magnificent barrier, though it may not serve to bar the eternal aspirations of the Hellenes; for many impatient eyes turn continually towards the land of promise, where the dozing Porte still holds its sway.

As we stand, Pelion is far to the right; in front of us is Ossa; and to the left the domes and cusps of mightier Olympus tower over all, sagaciously assigned of old as the abode of shadowy deities, whose priests found these inaccessible heights as convenient to their cult as modern ecclesiastics have sometimes proved the labyrinths of controversial theology to be to theirs. Farther again to the west stretches in long perspective a range of snowy peaks, till the faint outlines of Epirus and Albania close the view. There is something in the breadth of this horizon, the rich plain and royal sweep of mountain-crests, that recalls the panorama of Alps and level Lombardy, viewed from the towers of Turin.

After all this brilliancy and breadth, how strangely narrow and dim the interior of the mosque seems when we descend! We stand a while on the threshold of the inner court, corresponding to the choir or chancel of a Christian church. Worshippers enter one by one, kick off their slippers, pay their devotions, and so depart; and all the time a muezzin, kneeling on a carpet and leaning his back against a wall, chants monotonously and discordantly from the Koran.

There is not much winter shooting in the immediate environs of Larissa. The great fenceless, almost treeless, plain, with its monotonous tracts alternately of ploughed land, dead stubble, or withered weeds, seems to harbour

little winged game after the quails have left. Bustard, it is true, are tolerably plentiful; but they are keenly looked after by local gunners, who may be seen bringing them in for sale, slung on the saddles of their mules or ponies.

But our kind friends in Larissa were determined to provide us amusement of the kind dear to Englishmen, and the Demarch arranged for us an expedition to the preserves of a Turkish landowner, distant about ten miles from the city, on the southern spurs of Mount Ossa.

It was a glorious morning when we set out. Not a cloud floated in the sky, the gale had subsided, there was a delicious freshness in the air, and to the north Mount Olympus rose clear and glistering, betokening steady weather. As above mentioned, there is only one street in Larissa over which a carriage can be driven, and as this does not lead in the direction we wished to go, a long detour had to be made after leaving the eastern gate of the city; here axle-deep in ploughed fields, there bumping through Moslem cemeteries, and wholly over ways which any London cab-driver would pronounce impassable. However, after a couple of miles of this work, we gained the new Greek road running straight and fair to Hagyia, and the procession of three carriages rattled on at a good pace. A diversion was caused in crossing a stream some five miles from the start, where two small grebes were sighted on the water. A great loading of guns took place. The English *chasseurs* were invited to descend and open the sport; but they waived the privilege, declaring the birds not to be ducks, but only *plongeurs*, and therefore not worth powder and shot. It was clear

that their motives were misunderstood, and that they were suspected of having misgivings of their ability to hit such small objects. To the Demarch therefore fell the lot to approach and fire, which he did with great eagerness, but without effect.

Progress was resumed. In the distance appeared our rendezvous, a large wood at the foot of the mountains, just under the hill-village of Marmagnano, and the ground began to look more gamey. Three wild geese rose far out of shot from a swampy meadow, and a hare moved out of some rushes after we had left the highroad and were driving across the open plain.

The first ceremony on arriving was an excellent *déjeuner à la fourchette*, spread on the short turf in the bright warm sunshine. There were six regular guns—two Turkish gentlemen, two Greeks, and two Englishmen; but in addition nearly all the beaters, of whom there were a score or more, were armed with fowling-pieces of sorts. It was a pretty scene: the bivouac, the groups of romantically dressed peasants, the excited dogs, the picketed horses. The wood was very thick copse, of great extent, and containing some magnificent plane-trees, oaks, and black poplars. The defect of Greek scenery, as a rule, is the want of trees: those that are allowed to stand are cruelly maltreated—the hard-wood being lopped and hacked for fuel, the firs being gashed and bled to the verge of death for resin, with which the Greeks love to spoil their excellent wine. It is therefore a great treat to get into a bit of real woodland, and the russet oaks and silvery poplar stems towered nobly against the blue mountain background.

It was not, let it be confessed, without some qualms of

misgiving that we surveyed the dense jungle before us and took anxious note of the number of guns—nearly twenty in all—with which the battue was to be conducted. What was the plan of operations? we asked; were we to walk in line, or were we to be stationed round the covert? 'D'abord, il faut aller partout,' replied our host, waving both hands airily in the direction of the wood, 'et quand vous entendrez aboyer les chiens—alors, vous chercherez une bonne place!'

This was not very reassuring; however, the party soon scattered through the copse, and operations began. Once more the unskilfulness of the English sportsmen became too manifest. A blackbird was observed sitting on a bramble-bush; a native *chasseur* pointed him out to the foreigner, who refused to shoot. Ah! it was too small a mark for him, so down went the Greek, stooping low, stalked the quarry, obtained a safe sitting shot, and, with a prodigious report, laid the unlucky songster low.

But there is bigger game on foot. It is time for each to seek 'une bonne place,' for the dogs are barking wildly. The pack, by the bye, is a mixed one; there is one English fox-hound, three pointers, and six or seven nondescripts. They are tearing through the underwood, throwing their tongues merrily—pointers and all. A grey object darts shadow-like across a glade—stay! don't shoot! it is one of the pack: no, by the chaste huntress! it is a jackal, and we should earn effusive gratitude from the shepherds if we could secure his skin. But it is too late now, he is away to the hill, and we shall see him no more. A fine old red dog-fox is not so lucky; he is bowled over by one of the beaters, who falls upon him and flays him on the spot—thereby putting himself two clear days' wages to

the good, for a fox-skin commands five drachmas in Larissa market. Had the woodcocks been in, there would have been one in every bush, we were assured; the hard weather had driven them to the coast, and only four or five couple were bagged.

One of the prettiest sights of the day was afforded by a pair of white-tailed eagles which had their eyrie, a huge agglomeration of sticks, in the fork of an immense poplar not more than thirty feet above the ground. They were very bold, and it was not till several shots had been fired that they left their stronghold, and rising slowly on broad pinions to a great height, they continued soaring far above our heads for the rest of the day. Birds of prey, indeed, were much more conspicuous in this preserve than game, and better opportunity could not be had of watching the habits of buzzards (both the rough-legged and common kind), kites, harriers, kestrels, sparrow and other hawks.

As it wore to afternoon the heat became oppressive: the party was scattered far and wide: game was scarce, and two of us made our way back to the carriages to rejoin a member of the Greek government who had accompanied us from Athens. Not being a sportsman, he had not joined in the chase: none the less, however, had he met with his adventure. Visitors to Thessaly are always cautioned about the ferocity of the sheep-dogs. These strong Molossian hounds are prized by the shepherds as the guardians of their flocks against jackals: if a stranger is attacked he may defend himself with a knife; but—such is the custom of the country—if he shoots one of them in self-defence, the shepherds shoot *him*, and there is not much chance of redress. Our contemplative friend

was strolling along the wood-side, when he was suddenly set upon by two of these ferocious animals. A long black overcoat which he wore was instantaneously bereft of one of its tails—torn off by their powerful fangs; and then, with admirable presence of mind, he bethought him of Ulysses' tactics when, on his return to Ithaca, he was attacked by his own dogs—*he sat down.*

It is an infallible recipe: the dogs accept the surrender: they are content with setting the trespasser at bay, and they keep him there till their master comes to call him to account. The lesson is worth bearing in mind by visitors in these lands; for the conduct of the sheep-dog is the single exception to the hospitality shown to travellers in the interior of Greece.

As this day of memorable brilliancy drew to a close, a remarkable display of bird-life presented itself. The great fresh-water lake of Karlé, producing vast shoals of carp, and attracting large flights of wild-fowl, lies between the mountain-groups of Pelion and Ossa. It seems to be the remains of the inland sea which once flowed over the plains of Larissa and Trikala, the waters of which found an escape through the beautiful vale of Tempe. Immense flights of cormorants, coming from the direction of the Karlé lake, but possibly travelling from the Gulf of Salonike, farther to the east, appeared in the sky, moving steadily towards the nor'-nor'-west. The first and largest of these flights, formed in the shape of a huge <, could not have contained less than 1500 or 2000 birds. From point to point of the < appeared to measure about two miles. This great flight was followed by others, numbering from 150 to 500 in each. In all there could not have been less than 4000 or 5000 birds passing over our heads

in the space of half an hour, out of gunshot, but so near that we could hear the sound of their wings in the still air. The number of fish consumed by such a multitude of these destructive birds must be prodigious.

III

It was among the rank fallows of Thessaly that the plague of field voles took its rise, and, growing to uncontrollable dimensions, desolated the harvests of 1891 and 1892. Simultaneously, a wide pastoral area in southern Scotland was infested by swarms of voles.

The Plague of Voles

The Thessalian vole (*Arvicola Guntheri*), though nearly akin to, differs specifically from, the vole with which Scottish farmers are only too well acquainted (*Arvicola agrestis*). It differs also in habits; for whereas the British vole lives on the surface, and does not burrow, or, at most, scrapes out shallow runs, its Greek congener riddles the banks and fields with innumerable deep holes. At the time of our visit—mid-winter—the little animals were underground: winter in that country, though short, is a period of much more absolute repose in vegetation than in our long dripping seasons; there is no grass to tempt the voles abroad, and the presence of innumerable buzzards, kites, and kestrels, soaring and hovering over the plain from 'the rising of the morning till the stars appear,' seems to ensure the summary fate of any over-venturesome individual that should emerge.

The fact that birds of prey exist unmolested in such large numbers over the vole-infected districts of Thessaly has a distinct bearing upon the theory put forward in

our own country that the excessive multiplication of mice and voles has been due to the destruction of hawks and owls in the interests of game-preserving. No such proposition can be maintained in view of the plain facts of the case. Not only do the English chroniclers record recurrent visitations of this pest centuries before game-preserving, in the strict sense, was dreamt of in England, but here in Thessaly it never occurs to anybody to shoot the natural enemies of mice. They are always present in great numbers. In 1866, under the dominion of the Turks, there was an outbreak similar to that of this year and last. The Mohammedans are very kind to wild animals, and protect all that an English gamekeeper classes as vermin; but in spite of this the plague of mice comes (as it did in the days of Apollo Smintheus, the Mouse-destroyer), waxes and wanes, according to the character of the seasons.

It must not be inferred from this that there is any doubt as to the useful work done by buzzards, kestrels, and all kinds of owls, against which gamekeepers have hitherto been allowed, and even encouraged by those who ought to know better, to wage indiscriminate war. These birds do little harm to game; their presence may mitigate, sometimes even avert, a plague of mice; but mild seasons with abundant herbage will ever tend to encourage extraordinary swarms of small rodents, and the only chance of arresting the mischief under such circumstances lies in prompt and combined action by men and with dogs on the first symptoms of undue increase.

IV

Momentum *versus* Matter

Somebody—probably that indefatigable interviewer Lord Mahon—once asked the Duke of Wellington why Souham did not press him more closely in that terrible retreat from Bourgos in 1812, during which, out of a total of about 31,000 men, he lost 7000 by disease, straggling, and desertion. 'Because,' he replied, 'the French had learned that our bullets were not made of butter!' No doubt they were very awkward 'pats,' those terrible leaden spheres, weighing twelve to the pound, which Brown Bess spread with such deadly result up to her effective range of a little over one hundred yards, and the lesson had been read to French conscripts upon many a bloody field. What would have been the bill of mortality had these bullets *really* been made of butter? An idle question, it may seem, yet one upon which I was set cogitating the other day by a singular incident.

Returning one evening to my own house, I noticed a large round hole in the plate-glass window of the library, as if a football had been driven through it. There were no boys about, or the cause might have been such as *saute aux yeux*. Upon reaching the library I found the floor covered with shattered glass, showing that the impact had been from the outside, but nothing was visible within to account for it. The hole in the plate-glass was round and clean; the remainder of the sheet was firm in the window-frame.

More puzzled than ever, I summoned my better half to discuss the problem. She, being of a practical turn, began looking under the furniture for the agent of destruction; while I stood idle, considering such search

superfluous, mutely speculating how the deuce a plate-glass window was to be replaced in a remote corner of western Scotland. For, mark ye, it was in a time of frost, and a keen north wind was blowing through the orifice. Presently my wife exclaimed: 'Here it is, poor thing!' Between a large armchair and the fire-place crouched a hen pheasant, which I caught. It showed no wound or sign of damage, and struggled vigorously to get free. When it was released upon the terrace it flew a short distance, alighted, ran away strongly, and was seen no more. It seems to me very remarkable that a bird should fly uninjured through plate-glass as simply as a circus rider jumps through a paper hoop. One has always been told that any man of ordinary strength can drive his fist through a door panel. The only one whom I ever knew to attempt it succeeded, indeed, but at the cost of a dislocated little finger knuckle. It was explained to him that if he had aimed at a point a foot *behind* the panel, instead of at the panel itself, his hand would have passed through without a scratch. But who is there of fortitude to put that to the test? How often has one not cause to wonder at the thickness and strength of an oaken rail through which the slender cannon-bone of a horse may be driven, often without even an abrasion of the skin. The horse is aiming at the field beyond the fence. Reverse the process; let the horse's leg be stationary, and the oaken rail be driven against it at high velocity, and who can doubt which would be shattered?

A signal example of the imperious nature of momentum was given a few years ago, when a horse ran off with its rider in the Mall or Constitution Hill (I forget which), charged the high iron railings in front of Buckingham

Palace, made a clean breach in them, and both landed unhurt within the enclosure. Force is undoubtedly one of the most intangible, inexplicable, of mysteries. One is warned against the use of anthropomorphic terms in discussing it, which tend to divert the intellect from precise analysis, and we are bidden to regard it as no more than the rate per unit of length at which energy is transferred or transformed. But this carries the ordinary mind not very far, in fact no distance at all, in apprehending what avails in the transference of energy from a soft substance to a hard one, to protect from injury such vulnerable surfaces as the skin on a horse's leg against oak or iron, or a hen pheasant's head against plate-glass.

February

V

The Gold-crested Wren

Most birds, like other vertebrate animals, snatch intervals of rest during the day, if daytime be their period of activity. Even such nocturnal animals as the fox and the owl do not spend the hours of darkness in perpetual motion. The albatross itself, which remains on the wing in the wake of a ship for many days without alighting, is credited by Tom Moore, probably correctly, with 'cloud-rocked slumberings.' The flight of that great bird is mainly automatic; its own weight acts like the string of a kite, and the creature is propelled by the air passing under the rigid 'fore-leach' of the wing, and pressing upwards the pliant 'after-leach.' Swifts and swallows, most aerial of British birds, may occasionally be seen in brief repose; not so the tiniest of all our feathered fowls, the gold-crested wren. I doubt whether the most vigilant observer has ever detected one of these little creatures otherwise than in rapid motion, if it was not the hen bird sitting close on her eggs in that delicate shrine which she and her mate have the hereditary craft to construct.

During the present winter (1901), a solitary goldcrest has been a frequent morning visitor to a large holly-tree before my dining-room windows. It is not the gleaming

berries that attract him; you might as well set a football before a hungry schoolboy and bid him break his fast upon it. No: like a typical Englishman, this tiny fowl ejaculates 'A fine morning! What shall we kill to-day?' He lives by slaughter; wherefore his favourite haunt is the pine wood, for there, among the warm green needle-clusters, he is most sure to find the diminutive flying insects, larvæ, and eggs upon which he feeds. That is the secret of his preference for evergreens, and he condescends to visit my holly-tree because of the harbour it affords to insect life.

The activity of our *Regulus* is bewildering. The holly-tree is over thirty feet high, and bulky withal, yet within half an hour this indefatigable atom has run over every branch of it to its tip, half on foot and half on wing, swinging round, heels uppermost, to examine the under surfaces of the leaves, and occasionally darting out after small fluttering moths dislodged from shelter. I was fairly baffled in attempting to compute the distance travelled by the bird in beating the single tree before he went on to the next. Montagu, the ornithologist, however, has left on record an observation which affords some basis for calculations. He was lucky enough to transfer to his own study a nest with eight young gold-crests, without detaching them from the care of their parents. He noted carefully how often the little mother visited the brood, and found that she did so on an average of once in every minute and a half or two minutes, practically thirty-six visits in every hour during a summer day of sixteen hours, or 546 visits a day. Now, let us suppose that each of these journeys extended to no more than a hundred yards—a

very modest computation—the daily aggregate amounted to thirty-one miles, being a distance 622,614 times greater than the traveller's stature, $3\frac{1}{2}$ inches, measured from tip of bill to tip of tail. To equal this performance, a six-foot man would have to travel $707\frac{1}{2}$ miles in a single day without assistance to his natural means of locomotion, or, say, from Land's End to John o' Groats, and to repeat the journey daily for ten days, besides catching live animals and personally distributing them among his family 546 times in each day.

The gold-crested wren (by the bye, it is not a wren, *Troglodytes*, but belongs to a separate genus *Regulus*, little distinct from the warblers, *Silvia*) is one of those pretty birds which it is gratifying to note are increasing in numbers in this country, owing to the increase of woodland, especially in the north of Scotland. Moreover, it is a creature against which no human being can bear a grudge, for its pursuits are not only harmless, but wholly beneficial, seeing that it preys diligently upon insects infesting trees. A still larger increase, and from a similar cause, has taken place of late years in the crossbill—a brilliant denizen of the pine woods of the Scottish Highlands. But the crossbill—more's the pity!—finds ill favour from those ambitious persons who have set scientific forestry on foot for the first time in Britain. The crossbill makes his staple diet on the seeds of pine and fir, sheering asunder the cones with his powerful bill, and thereby seriously interfering with the process of natural regeneration from self-sown seeds which form such an important part in the economy of Continental foresters. The crossbill, therefore, has been proscribed on certain Highland estates as ruthlessly as ever were

the Macgregors—'the clan that is nameless by day'—and many scores of them have found their way lately to the bird stuffers of Inverness. There is no such disappointing booty to the taxidermist. The glory of the crossbill's carmine hood and mantle is almost as transient as that of 'Sharon's dewy rose,' fading after death to a dull greenish olive.

If the daily normal output of energy from the diminutive carcase of the goldcrest astonishes us, as well it may, much more amazing is the sustained effort of migration twice a year over thousands of miles; the more so because the wings of this pigmy appear very ill adapted for long flight. In masters of wingmanship, such as the falcon and the swift, the wing is long and pointed, the second pen-feather being the longest; but in the goldcrest the spread of wing is not equal to that of a well-grown death's-head moth, the wing itself being rounded, with the fifth pen-feather longer than the first four. This serves well enough for the creature to flit from bough to bough, as we are accustomed to see it, but it baffles all understanding to explain how this mechanism enables the goldcrest to take his part in the strange drama enacted every spring and autumn in Heligoland, the immemorial resting-place of birds of passage. Herr Gätke, that splendid islander who, for more than fifty years, took careful note—ay, and heavy toll too—of the passing flocks, has well described the arrival of the goldcrest—*goldhähnchen*, little gold hen as they have it in German.

'Their migration is performed with perfect regularity year after year, and conducts them not only in hundreds, but at times in many hundreds of thousands, in one night to this

island. On the following morning their merry call-note resounds from the bushes and shrubs of all the gardens, and even the grassy plain of the upper plateau teems with them from one end to the other. . . . In 1882 the earliest individuals appeared on September 8, and the migration proceeded, with occasional interruptions, in moderate numbers throughout the month. With the approach of October a considerable increase in the number took place, and on the night of the 28th the migration assumed such vast dimensions that even an approximate computation of their numbers was quite out of the question. Perhaps the simile of a snow-storm may help to convey an idea of the scene. From ten at night till daybreak the birds sped steadily from east to west, past the lighthouse, appearing under the glare of the lantern like so many real snowflakes driven by the wind. At daybreak the whole island was literally covered with the birds, but by ten o'clock in the morning the majority had again proceeded on their journey.'

Breakfastless, no doubt, for even were Heligoland covered with forests, instead of being a treeless tabular island scarcely exceeding a mile in its greatest length, it must long ago have been 'brosiered'—to use an ancient term in Oxford slang—its resources exhausted, by successive multitudes of passengers.

No doubt 1882 must have been an unusually favourable year for the reproduction of goldcrests, and very great was the consequent autumnal exodus from their breeding-grounds, which extend from the British Isles through central and northern Europe and Asia, along the limits of the pines as far as Japan. Be it noted that the multitudes witnessed by Gätke were but a single column in the grand army on its southward march. Heligoland, from its insular position, attracts countless multitudes of migrant birds who alight there, but in the autumn of 1882 unusual numbers of goldcrests were observed

also at stations all along the eastern coast of Britain, and these birds would not go near Heligoland. Though greatly diminished in numbers, the northward migration in spring is equally well marked.

'Imagine (says Herr Gätke) a mild and clear evening in Spring, the sun has set long since . . . the last soft note of the redbreast has died away, and for a considerable time no sound has disturbed the scented stillness of the air. Suddenly, through the silence, the clear, fine note of our little wren is heard; and soon afterwards the bird is seen rising from the neighbouring bushes against the luminous evening sky. At measured intervals its call-note "hiit, hiit, hiit" is heard as it flies off in slightly ascending spirals over the neighbouring gardens; then from every bush—here, there, near and far—the cry is answered, and from all sides his travelling companions mount upwards in the wake of the earliest starter. Assured by the answering voices that all the sleepers are aroused, he ceases circling about, and rises almost vertically with brief and rapid strokes. Soon all assemble in a somewhat loose swarm; the call-notes are silenced when the last straggler has joined the departing flock, and the tiny wanderers vanish from sight.'

VI

The Problem of Dispersal.

Few subjects provide more perplexing conundrums to the reflective loafer in the country than the distribution of certain fresh-water fishes on the surface of the globe. Having regard to the variability of most families of fish, which is far greater than that of other and higher vertebrates, and to the striking changes wrought in the appearance of species, and even of individuals, by differing conditions of climate, soil, food, and general physical environment, it is startling to find that, although in countless instances these agencies have

brought about such permanent structural changes as constitute distinct species, there are also instances of organic constancy having prevailed to preserve the species unchanged through vast periods of time, in regions widely and impassably separated from each other. Separated, that is, not only by thousands of miles in space, but by the barrier of salt water, in which fish of these species cannot exist for five minutes.

Consider, for example, the suggestions offered by the genus *Galaxias*, consisting of about fourteen species of small fresh-water fishes confined to the southern hemisphere. In New Zealand they were dubbed trout by the early settlers, and certainly in their spotted skins and general outline they bear a superficial resemblance to our own brook trout, but they have no scales, and are closely related, not to the *salmonidæ*, but to the pike family. They are, in fact, as Dr. Günther puts it, the pikes of the southern hemisphere. Of this genus six species have been identified in Tasmania and south-eastern Australia, five in New Zealand and the Auckland Islands, and four in the Patagonian region of South America. Now there would be nothing surprising in the occurrence of different species of the same genus *Galaxias* in different parts of this enormous area, for there is a close general affinity between the fresh-water fishes of Australasia and South America, accounted for partly by similarity of physical environment. But the important fact is that one species, *Galaxias attenuatus*, is identical in Tasmania, New Zealand, the Falkland Islands, and the Fuegian region of South America. Great is the significance enveloped in this apparently insignificant creature of three or four inches long. It almost amounts to an axiom of evolution

that the same species does not take independent rise in areas remote from each other. Yet this little *Galaxias* cannot be an immigrant into South America from Australasia, nor vice versâ. Thousands of miles of salt water bar the way. The suggestion is obvious that in the Tertiary epoch terrestrial connection existed between South America and Australasia, and that *Galaxias* preserves unchanged the features of ancestors which existed anterior to the severance of the two continents, and long before the appearance of man upon the earth. Even so, it would be remarkable that individuals of so very plastic a class should have undergone no specific modification in the course of tens of thousands of years of isolation; and in any case it would be rash, in the absence of geological evidence, to assume a former different distribution of land and ocean in order to account for the presence of *Galaxias* in lands so widely separated.

Coming now to the northern hemisphere, there is to be noticed the presence of several identical species in Europe and North America. The Atlantic salmon, the sturgeon, and the common stickleback have no particular relation to the problem of dispersal, for the first two are regular sea-going species, and the stickleback accommodates himself readily to salt water. The perch, also, has no aversion for brackish water, though it is not so simple to account for the presence in American waters of the European pike (*Esox lucius*) alongside of distinctively American and closely allied species such as the mascalonge (*Esox estore*). But in the burbot (*Lota vulgaris*) we come to a fish singular in many respects, among others, that it is the only fish of the cod family inhabiting fresh water, and not only so, but absolutely impatient of salt

water. Practically it is a hake, and at a remote period probably was a marine fish. But at the time when it acquired the exclusively fresh-water habit there must have been terrestrial connection between Europe and America, for the burbot is now the same in both these continents, though it does not extend into Asia. It is everywhere very local, but in England its distribution points distinctly to an arrangement of sea and land very different to that now prevailing. The burbot is found only in the Trent, the Ouse, and certain other eastward-flowing rivers and their tributaries. It was formerly abundant in the Thames, but it is doubtful whether it still survives in that river, and it never was in the Severn or Wye. When this fresh-water cod first found a home in these waters the German Ocean was a plain, through which ran northwards a mighty river, known in its present truncated condition as the Rhine, but then receiving affluents from the eastern English watershed. Hence it is easy to trace the connection between the burbots of the Rhine and those of our Staffordshire brooks.

Obvious as the identity is between some American and European species, there are some remarkable discrepancies in the fresh-water fauna of the two continents. The great carp family is numerously represented in both, but of this the genera of barbel and loach are entirely absent from the New World. Europe and Asia together number about two hundred species of barbel and fifty species of loach. Of the last, the modest little fish that lurks under stones in English woods and Scottish burns, never exceeding and seldom attaining a stature of five inches, has a romantic family history, could it only communicate the same. Briefly, it is found in Japan, has not been recorded from

continental Asia, is plentiful almost everywhere in Europe except Denmark and Scandinavia—although Linnæus says that King Frederick of Sweden endeavoured to establish it in his dominions—and does not exist in America. I write these lines beside a small burn flowing independently into the sea on the west coast of Scotland. It abounds with loaches, greatly to the profit of certain pink-fleshed trout which inhabit the said water. What I should like to know is: How did the loaches get into this isolated burn? and how have they managed to maintain their identity with their kindred in Japan? For the loaches belong to the carps—a family noted for variability.

March

VII

The true Salmon Disease

It is satisfactory to note (1903) a very important discovery in relation to the salmon disease, whereof the origin and nature have been keeping scientific inquiry at bay for more than a quarter of a century. The disease first attracted attention in the year 1877, when large numbers of salmon perished in the rivers of the Solway. The fish affected showed at first whitish patches on such parts of the skin as were not protected by scales—the head, the adipose fin, and the bases of other fins. These patches appeared to be caused by a fungoid growth; they spread, became confluent, formed deep ulcers eating into the muscle, until the fish became weak and stupid, drifting into the shallows, and wallowing languidly till it died. The disease, which has reappeared at uncertain intervals in nearly all British salmon rivers since 1877, probably existed as an epizootic before that date, although no previous record of its ravages has been preserved.

The late Thomas Huxley, being appointed Inspector of Fisheries in 1881, had his attention drawn to it. Recognising the vegetable growth upon the ulcers as *Saprolegnia ferax*, a mould or fungus closely related to that to which is attributed the potato disease, he came to

DUNKELD WATER.

"IS HE CLEAN OR FOUL?"

the conclusion that this fungus was 'the sole cause of the disease, whatever circumstances may, in a secondary manner, assist its operations'; and this was confirmed by the experiments of Mr. G. Murray, who succeeded in transplanting the fungus to the bodies of dead flies, and thence inoculating healthy fish, which died in consequence of salmon disease. The chain of evidence seemed complete: *Saprolegnia* was pronounced to be the direct agent in salmon disease, and efforts to mitigate or avert the latter must be directed to extirpating the fungus, and, as far as possible, excluding it from our rivers.

It has been reserved for Mr. J. Hume Patterson, assistant bacteriologist to the Corporation of Glasgow, to disclose the real nature of this destructive pest. Puzzled to understand how *Saprolegnia*, which normally thrives upon dead animal tissue, should find a congenial soil in the living flesh of one of the most vigorous of fishes, Mr. Patterson prepared cultures from the diseased parts of salmon, in which was revealed the presence of a micro-organism previously unrecognised, and totally distinct from the *Saprolegnia*. By a series of scrupulously careful experiments, which are fully explained and illustrated with photographs in a Blue-book just published by the Fishery Board for Scotland—'The Cause of the Salmon Disease; by J. Hume Patterson. (H.M. Stationery Office)—Mr. Patterson proved that this bacillus, which he has named *Bacillus Salmonis Pestis*, is constantly present in diseased fish, that it obtains access to the tissues through wounds or abrasion of the skin, multiplies with exceeding rapidity, and by causing necrosis or death of the muscular tissue, forms a suitable nidus for the growth of *Saprolegnia*, the spores of which abound in ordinary river water, ready to

germinate upon any dead animal substance. Thus it has now been shown that the fungus which hitherto has been regarded as the disease itself is not pathogenic; it only takes advantage of the morbid condition brought about by the more subtle bacillus.

Then, it may be asked, how is this to be reconciled with Mr. Murray's success in producing salmon disease in healthy fish by inoculating them with the fungus? It is explained by the invariable presence of numerous and rapidly multiplying colonies of the real pathogenic bacillus in *Saprolegnia* growing upon diseased salmon. It is an operation of the greatest delicacy to obtain a culture of the one without including any of the other; and this operation, of course, could not be even attempted until the true micro-organism of the plague had been identified. Mr. Murray believed that he had transplanted the disease from salmon to dead flies, and from dead flies to live fish, by a process of inoculation with the pure culture of *Saprolegnia*. What he really did was to inoculate with a culture of *Saprolegnia*, plus a culture of *Bacillus Salmonis Pestis*.

But Mr. Patterson obtained absolutely pure and distinct cultures of both these organisms. Healthy fish inoculated with *Saprolegnia* only suffered no whit, for that growth can only be established on dead tissue; but healthy fish inoculated with the new bacillus speedily perished with the usual symptoms of disease, including the growth of *Saprolegnia* in the diseased areas.

Having thus arrived at a precise knowledge of the cause and nature of the salmon disease, we are so far on the right road to contrive means to check or prevent it. Much of the supposed advance hitherto made has

proved illusory. It used to be supposed that those fish which could reach the sea before the disease ended fatally met with a natural cure, because the fungus disappeared under the influence of salt water. But the fungus is now shown to be only the outward and visible sign of the inward and deadly morbus, and it is discouraging to find that the new bacillus thrives well in a salt medium, and best under a low temperature. Mr. Patterson ascertained that it multiplied apace in a freezing mixture of ice and salt, whereas a temperature of 100 deg. Fahrenheit is fatal to it. One precaution he recommends to be observed by owners of fisheries. The bacillus is easily transmitted from dead diseased fish to living healthy ones in the same water; wherefore it is obviously expedient that dead and dying fish should be removed from the river as speedily as possible and *destroyed by burning.* The common practice of burying them within the watershed is futile, for the germs are preserved alive in the earth till the next flood carries them back into the stream.

There is a widespread fallacy among fishermen that outbreaks of salmon disease are the result of an overstock of fish. This belief has already been the cause of a lot of mischief. Owners of rivers have been positively afraid of so regulating nets, etc., as to increase the abundance of fish. There is absolutely no ground for this arbitrary and misleading hypothesis. Of course a given percentage of diseased salmon will attract more attention when the stock of fish is large than when it is small; and people unaccustomed to sound inductive process jump to the conclusion that the disease arises from overcrowding.

VIII

The habit of Hollies

The task which Mr. G. F. Scott Elliot has undertaken in his excellent little manual, *Nature Studies*, is a praiseworthy one. It is an attempt to condense the botanical lore of which he is so competent a master, and to present it to his readers stripped of that deterrent envelope of technical phraseology wherein such lore is usually entombed. That he has only partially succeeded is no fault of Mr. Elliot. Any language in colloquial use—most of all one like English, in world-wide use—must be deficient in that rigid precision which is one of the postulates of scientific discourse:—

> 'That I have been obliged to say *chlorophyll* instead of "leaf-green," or *cambium* instead of "building-ring," is not my fault. These terms have been fastened on the English language, and it would be hypercritical to displace them. I have gone as far as I dared, not as far as I would like, in the direction of suppression.'

In truth, one cannot go very far in that direction without encountering ambiguity. Scientific phraseology is not a luxury or a vanity—nomenclature and classification must be expressed in a dead language—one that has passed beyond all change. Consider an instance in ornithology. Among all English bird-names perhaps there is not one that conveys to us islanders such a familiar image as that of 'robin.' Even town-bred children, for whom the greenwood, alas! is too often an unmeaning phrase, recognise in that title the little red-

breasted bird which spends Christmas with us. But there are English-speaking millions oversea for whom the word 'robin' has a widely different significance. The Pilgrim Fathers and their followers applied this name to a kind of thrush (*Merula migratoria*), and that is now the robin of the United States. Nevertheless, the fact remains that many persons, especially girls and women, who might find solace in amateur science, are frightened away by long-tailed terms. Mr. Scott Elliot deserves well of the public for smoothing away such of these difficulties as may be removed.

In his chapter on 'Defence' this writer deals briefly, and as I venture to think, unsatisfactorily, with a certain characteristic of the holly; and, having been myself taken to task for some *obiter scriptum* upon this point, perhaps I may be allowed to say a word thereon.

'In the common holly (says Mr. Elliot) the leaf-teeth are spiny, and similar spines are found on the evergreen oak. It has been stated that, in both, the lower branches and those plants that have been especially cropped and pruned have much more spiny leaves than the higher branches, or specimens which have been allowed to grow freely. This would go to show that the injury done by grazing animals directly promotes the growth of prickles. But the fact is a little doubtful.'

Yes, it is a little doubtful, but only because people have been apt to direct their observations upon cultivated hollies, and upon some of the innumerable varieties that are to be found in gardens and nurseries. If you want to ascertain the normal behaviour of hollies, you must not content yourself with a survey from your library window or shrubbery walk; you must go afield, to the hedgerows, or to some wood where the accursed rabbit

has not destroyed the indigenous hollies. When I read the above-quoted passage on this fine Sunday morning I strolled out along the banks of Tay in that noble woodland which is continuous from Dunkeld to Murthly. Here there are many fine hollies, some on the river banks and cliffs, others on level ground, planted by no hand of man. There was not one of these which did not confirm my observations first made many years ago, and hardly one which did not bear evidence of special growth—not merely as a reaction against pruning or cropping, but *as a precaution against any such contingency*—so regular and deliberate as to suggest that these trees are something more than unconscious automata.

Many of these hollies are thirty feet high, with foliage down to the ground. They carry spinous leaves up to a height of three or four feet; above that level all the foliage is absolutely smooth and spineless. One tree rose from the ground in two bare stems, and the lower branches did not reach below the browsing level. But from between the two old stems rose a young shoot about four feet long, clothed throughout its entire length with intensely prickly leaves. This tree was growing in an enclosed wood where cattle could not come; still, roedeer might be about, and the holly armed its young growth at the low level, although the leaders of the old stems, not less vigorous in growth, bore leaves as smooth as a camellia's. I noted one particularly suggestive tree, an unhealthy one. The growth had died back along most of the branches, which stood out bare and dry; but a recuperative effort was in progress; fresh and luxuriant growth was bursting along nearly the whole height of the stem, and the foliage of this was vigorously prickly up to about

four feet, and smooth above that height. I noticed many instances of localised prickly growth where boughs, originally above the browsing level, and clothed with spineless leaves, had been weighed down and cropped by cattle. But this is merely a vigorous reaction against external injury, such as makes a clipped holly hedge bear spinous foliage from base to summit. The interesting question is whether the influence which directs the precautionary armature against a problematic foe be esoteric or exoteric? Are we to suppose that the holly has a subliminal conscience? or are we landed in teleology pure and simple?

Other prickly trees besides the holly exhibit similar behaviour. The common *Osmanthus*, the evergreen oak, and most of the junipers are among those to which I can testify. It will be interesting to note whether the prickly-leaved species of *Olearia*, etc., from Australasia have acquired the habit; and, if so, whether the protected line corresponds to the browsing height of a kangaroo.

IX

Birnam Wood

It is just one hundred and sixty-five years ago since the second Duke of Athole, a passionate lover of trees, received from Mr. Menzies of Culdares a few young trees from the Tyrol of a species hitherto unknown in Great Britain. It was deemed doubtful whether natives of a region so southerly as the Tyrol would endure the rigours of a Highland winter, so the seedlings were committed to the care of the gardener at Dunkeld House, who bestowed them tenderly in a greenhouse. Moist warmth and close atmosphere were

conditions least favourable to the little mountaineers; spindling sadly, most of them died, and the whole were cast out on the waste heap. Two of them retained enough vitality to revive in the clear, sharp air; they struck their rootlets into the sandy soil; and the Duke probably had forgotten all about Mr. Menzies's gift, when, one April morning, his eye fell upon a couple of dainty saplings, feathered with tender green, and studded with crimson bosses. Such was the haphazard introduction of the larch into Great Britain. The pair of outcasts may still be viewed near the west end of Dunkeld Cathedral, mighty columns clothed with deeply sculptured bark, towering to the height of one hundred feet, with far-spreading limbs casting dappled shade upon the green-sward.

The incident above described marked a notable era in British forestry. The Duke was so well pleased with the grace and vigour of the foreigners that, before his death in 1764, he had planted twenty square miles of his land with larches. For better or for worse, an element had been imported into Highland landscape which, more than any other, has wrought a change upon the aspect of our hillsides and glens. There are but three coniferous trees indigenous to Britain, the Scots pine, the yew, and the lowly juniper, all of them evergreen. The larch invasion cannot be reckoned an enrichment of the native woodland, because, lovely as this tree is in spring, when it puts forth its exquisite foliage of malachite green, in winter a larch wood is cold and bare, and the eye draws little solace from the expanse of ashen yellow, which has been made to replace the rich velvet mantle of Scots pine, relieved by gleaming, ruddy boughs.

'As I did stand my watch upon the hill,
I look'd toward Birnam, and anon, methought,
The wood began to move.'

Birnam wood has long since been felled, and has either come up again in the form of stool-grown oaks, never so free as the original trees from seed, or has been replanted with spruce and larch. But still there stands between Birnam Hotel and the river a giant oak, reputed to be the last survivor of Macbeth's 'moving grove.' It girths 22 feet at 4 feet from the ground, giving a diameter of 7 feet 4 inches. Hard by stands a formidable rival to the native, in the shape of a huge sycamore, which is not a tree indigenous to Britain. This monster has swelled to a girth of 24 feet at 4 feet from the ground; while, measured round the exposed part of the trunk at the ground level, it gives a dimension of upwards of 50 feet. Birnam Hill itself is still clothed in part with forest, but the trees are nearly all exotic—larch and spruce—save where the birch has sprung up thickly in the glades rent by storms.

This pass of Birnam, of old the main portal to the Highlands of Breadalbane and Blair Athole, is the choicest ground in all Scotland for the lover of trees. For many centuries the forest wealth of North Britain received ruthless, spendthrift handling. Generation after generation cut and came again for their hand-to-mouth wants, without a thought, apparently, for those who should come after them; until, at the beginning of the eighteenth century, Scotland had assumed that dispiriting nakedness which was to justify Dr. Johnson in his gibe that, in all his Scottish travels he never saw but three trees big enough to hang a man upon. Dunkeld and Birnam got a good start in reafforestation through the rare

prescience of the aforesaid Duke of Athole. Much of the ground about Dunkeld is so steep as to be quite inaccessible for ordinary planting operations; so that one wonders how exotic trees like larch, spruce, and silver fir obtained their foothold on these cliffs which they do so greatly adorn. The tradition runs that Napier the engineer, being on a visit to the planting Duke, and sympathising with his host's desire to restore the woodland, caused tin canisters to be filled with tree seeds and fired out of cannon against the heights. The canisters bursting against the rocks, scattered the seeds bravely, so that now every ledge, every cranny on Craig-y-Barns and Craig Vinean bears noble timber.

One cannot realise the size of some of these trees until one stands beside and lays a hand on them. One day of late I stepped ashore from my boat in a grove of splendid Scots pines to land a good salmon I had hooked. That operation having been happily effected, on looking round me I was struck by the gigantic dimensions of the tree stems. On measuring the Scots pine nearest to me I found its girth to be fifteen feet at the height of my shoulders. Not far off was a Weymouth pine (*Pinus strobus*) with a girth of thirteen feet three inches; a Spanish chestnut, fifteen feet; and a spruce fir, thirteen feet. The spruce fir, by the bye, is not usually a desirable addition to our woodlands, except on economic grounds. It is impatient of sea winds, its foliage has a tendency to rustiness, and scragginess generally befalls it in middle life. But the spruce forest of Dunkeld is simply glorious; silvery columns supporting dense towering spires of rifle-green to the height of more than one hundred feet. Here, too, may be seen the common silver fir, grown as it should be,

IN BIRNAM WOOD.

LONDON: EDWARD ARNOLD. 1902

in large companies of its own kind, not as we usually have it, scattered specimens over-topping deciduous trees around. Grown in masses, the silver fir, loftiest of all European trees, exchanges shelter with its brethren. There is something peculiarly rich and solemn in its massive obelisks of foliage.

April

X

Names of Places

On 2nd March 1888 the following telegram was handed in for delivery at the post-office of Chepstow:—

'Going to Llanfairpwllgungwllgogerhwllclydiligogogoch; shall be home by 4.30.'

The postmaster, thinking that there was more than a fair penn'orth of consonants in the name, referred it to his surveyor, who wrote back:—

'It is an attempt at the name [of a village in Anglesey], but is evidently not written by a Welshman; the spelling is incorrect, and, but for the joke of the thing, the ordinary abbreviation—Llanfairpwll[1]—would have been better. The full name correctly written I give below—Llanfairpwllgwyngyllgogerchwyrnydrobwillandisilliogogogoch.'

Now it is easy to share with the surveyor of Chepstow the humour of a name like this occurring in a modern telegram, and to join in the chuckle of the sender, who was within his rights in claiming it as a single word; but originally it must have been framed, like all other place-names, with sober indicative purpose. Distinct and permanent natural features in a country are generally distinguished by very simple titles. Thus, to take an

[1] It is often called Sillygogo by the natives.

example of a Celtic people dwelling near a river, they acquire the habit of referring to it simply as *amhuinn* (avun), the river, or *uisc*, the water; and successive races adopt the convenient term as saving them the trouble of finding a new designation.

A curious example once came to my notice of the modern use of the generic term for a stream. I was fishing the river at Cassiobury in Hertfordshire, and in the course of the day I asked the keeper what was its name.

'Well, sir,' he replied, 'it *has* a name to be zure, but dang me if I can remember un. We just calls it "the river."'

Presently a respectable-looking man came along—apparently a bailiff or some state official—who, the keeper said, would be sure to recollect the name of the river. But no—he, too, had forgotten it, though he remembered having heard it; and it was not until after he had made inquiry in the village that he returned with the information that the river rejoiced in the name of the Gade. Well, suppose this country were to fall under the dominion of Russia, and English speech to be proscribed or to become obsolete, the new rulers would assuredly adopt the title most commonly current in the locality, and the Gade would be known henceforth as 'the River.' Even so, when Celtic ceased to be spoken in England the conquering race made use of the generic titles they found in use: hence, from *amhuinn*, the innumerable Avons, Evans, and Owens among English, Scottish, and Irish river-names, and, from *uisc*, Esk, Exe, Usk, Isis (latinised), and Ouse. *Uisce bagh*—the water of life—*eau-de-vie*—has been shorn of its specific suffix, and has taken its

place in our dictionaries—perhaps too important a place in our habits—as 'whisky.'

So much for the establishment of the generic term in a district where one river predominates. But in a land abounding with rivers, specific titles become necessary for indicative purposes; and when the language of the inhabitants changes, as in England and most of Scotland Gaelic has been replaced by another speech, such specific titles often remain as the appellatives of different streams. This affords a fine opportunity for your imaginative guesser, and all kinds of fanciful theories are started to account for such names. Take, for instance, 'the Tarf'—a name borne by five rivers in as many counties of Scotland—to which may be added a sixth, the Tarth in Peeblesshire, all representing the Gaelic word *tarbh* (tarriv), a bull. Here is the way clear to a picturesque etymology, which has been given repeatedly in sober print. These streams are explained to have been called 'the bull' because of their loud roaring. It may be safely assumed that no such flight of imagination would ever be attempted by the natural man. How do the colonists of our own and other nations set about distinguishing between rivers in new lands? Do they call this one a bull because it roars, or a parrot because it chatters, or a serpent because it hisses? Not they. They either perpetuate the native name, when they can pronounce it with tolerable ease, as they did for the Mississippi, which means in the Cree dialect 'the great river'; or they express the same idea in their own language, as Rio Grande, a name applied of old by Spanish explorers and retained to this day by no less than seven rivers in the New World; or they call it after the name of its discoverer, or the first settler on its banks, a natural

means of designation, to which M'Kenzie river, Fraser river, and hundreds of others in all languages and all parts of the world owe their names. Or they call it after some natural feature or product of the country through which it flows, as in the instances of the Yellowstone river, a tributary of the Missouri, or the Rio de la Plata—river of the silver. Again, when they fail to pick up the native name, or when its pronunciation involves a conscious effort, or when there are no particular features to distinguish one river from another and no special person or incident to commemorate, recourse is had to the simple plan of numbering the rivers as they occur in their line of march. Thus when the Spaniards overran what is now the Argentine province of Cordova, they crossed five rivers which bear now in succession from the north, whence the invaders advanced, the names Rio Primero, Rio Secundo, Rio Tercero, Rio Quarto, and Rio Quinto.

Returning to the example first cited, if the river-name Tarf represents the Gaelic *tarbh*, a bull, how is its frequent occurrence to be accounted for? The simplest way is the surest. If you look at Blaeu's Atlas—a masterpiece of industry and skill—you will find in the maps of Scottish counties surveyed by Timothy Pont between the years 1595 and 1605 that nearly all the Highland river-names we now use have the word *amhuinn* (avon) prefixed to them. *Amhuinn tarbh* means the river of the bulls; and now there is legitimate scope for imagination in assigning the origin of such a title as Tarf to some incident either of primitive pastoral life or in the chase of the wild Caledonian cattle.

Enough, perhaps, has been said to indicate how simple, direct, and obvious is the meaning of the original place-

name, before it has become obscured by use in a foreign tongue and by more or less successful attempts at phonetic transcription, and how remote from the elaborate and artificial significance often sought to be read into it. In the old days of guesswork the explanation of the name Exeter found ready currency to the effect that it was the hail of the look-out on a Roman ship—*Ecce terra!*—'Land-ho!' To this day there are numbers of worthy citizens of Exeter who would indignantly repudiate any other interpretation. Nevertheless it only requires a reference to the oldest written form of the name in the Anglo-Saxon Chronicle—namely, Exaceaster—to be certain that the significance is perfectly commonplace, the *ceaster* or camp beside the Exe, the Saxon population having already adopted the Celtic word *uisc*, the water, which they found attached to their river. Analogy is easily found in Doncaster, the camp on the Don, which is probably a contraction of the Celtic *dubh amhuinn*, black water, and in Lancaster, the camp on the Alauna, the latinised form of the Celtic *amhuinn leamhean* (avon lawn), river of the elms, which we now speak of as the Lune.

The simplicity of place-names, the absence of inventive effort in framing them, are what impress every one who devotes study to them. If it is not beyond the power of man to sit down and arrange a number of unmeaning syllables to denote a given locality, at all events, it is totally opposed to human behaviour. We have all heard of the invalid lady who begged the clergyman to read a certain chapter of the Acts of the Apostles that she might derive consolation from that blessed word Mesopotamia. Well, Mesopotamia was applied to a physical configuration

which occurs in every country, and must find expression in every language under the sun—the tract 'between the rivers' Tigris and Euphrates, called by the Arabs El Gezira, which signifies much the same thing. In English we have the exact equivalent in Twining in Gloucestershire and Twynholm in Galloway, which represent the Anglo-Saxon *tweon*, between, and *eaum* or *eán*, the dative (or locative) plural of *eá*, a river. Gaelic has its Eddrachillis in Sutherlandshire—*eadar chaolas*, between the firths, and Ederavon in Dunbartonshire—*eadar amhuinn*, between the rivers; German, its Interlacken and Coblentz (from the Latin Confluentes); Italian, Terni and Teramo, contracted forms of *inter amnes*; and Spanish its Entre Rios, the district in Argentina between the rivers Parana and Uruguay.

The first thing, then, to bear in mind in any attempt to study place-names is their uniform simplicity. Most people not fluent in Welsh would recoil from the endeavour to construe Llanfairpwllgwyngyllgogerchwyrndrobwilliandisilliogogogoch; nevertheless we may rest assured that it is an attempt in perfectly good faith to describe a certain place so that it shall not be mistaken for another. The next thing to note is the remarkable permanence of some of these names. Most of the habitable parts of the globe have been tenanted in succession by waves of different races, each speaking a different language from its predecessors, yet each adopting for convenience some of the names they found attached to hills, streams, woods, and fields. Diodorus Siculus, writing in the last century before Christ, has preserved two place-names apparently in the language of the small dark-haired folk who occupied Britain before it was overrun by the

Celts. He tells us that they called the Land's End Belerion, and that they conveyed the tin which they worked in Cornish mines 'to a certain island lying off Britain called Ictis.' Belerion is lost, but Ictis seems to be the same as Vectis, so rendered by the Romans, and handed down to us as the Isle of Wight. Now the language of these primitive Silurians has disappeared, and, forasmuch as it never was written, it is hopeless to attempt any solution of the meaning of names framed in it. But probably we use a good many of them unconsciously, seeing how many place-names fail to receive any light even when traced back to their oldest written forms.

The occupation by the Celts was doubtless far more effective and implied a higher degree of civilisation than that of the Silurians. It is no matter for surprise, therefore, that they impressed many names in their own language upon the land, which succeeding waves of Roman, Saxon, and Norseman have not prevailed to obliterate. There is a substratum of Gaelic in the topography of the most thoroughly English counties, and one stumbles unexpectedly at times upon names almost unchanged. Fishing one summer on the Test, near Wherwell, I was allotted a dark, deep stretch of water as my beat. I was startled to hear it spoken of as 'the Dublin'—the black 'linn' or water—the same feature that gives its title to the capital of Ireland.

After the Celts came the Romans, whose rule over a great part of Britain endured for nearly four centuries. But their conquest differed from that of the Celts; it was not a national migration—not the movement of a race seeking relief from pressure—but a military invasion and occupation by troops recruited largely from the Continental Celts

—the Gauls of France and Belgium—speaking the same mother-tongue as the people they came to conquer. Hence, although Latin was undoubtedly the official language, as French was in England under the Norman and Plantagenet kings, it never became the vernacular, and, in consequence, Latin place-names are as rare as French in this country. The Latin *castrum* appears, after the departure of the Romans, in the Anglo-Saxon form of *ceaster* or *chester*, representing the same difference in the Teutonic dialects as is preserved in the forms 'kirk' and 'church'; but the prefix in such names as Winchester, Manchester, Gloucester, generally are contractions of the original Celtic name. Thus the Roman name for Winchester was Venta Belgarum—*venta* being their rendering of the Celtic *gvent*, downs or open country; for it was at Winchester that the great forest of Andred ended and the Hampshire downs began.

In fact, the Romans found how much easier it is to conquer a country than to alter the names of the rivers, hills, and towns thereof, and the solitary instance on record of their attempting to impose an official name ended in complete failure. London is a Celtic name, meaning, perhaps, the *dún*, fort, on the *lynn*, pool (we still hear talk about the Pool of London). This name the Roman governors were content at first to latinise into Londinium, but when it had grown to importance as a seaport and military base they deemed it worthy of something more high-sounding. A decree went forth, accordingly, that the town was to be called Augusta, and that, or Londinium Augusta, was for a while its official name. But the ancient name, conferred nobody knows how long ago by nobody cares what barbarous tribe, reasserted

itself, and Parliament, let it alter the government of London as it will, is now powerless to change its name.

Having got thus far, it may occur to some reader to ask what possible use there can be in worrying over the meanings of names. If they serve their purpose, why waste time over analysing them? That is a question nearly as disconcerting as the inquiry of the Little Dog in 'Reineke Fuchs.' 'Of what are you thinking so hard?' quoth he to the Owl.

'I am speculating,' answered the Owl, 'whether the first owl came out of an egg, or the first egg came out of an owl.'

'But that,' urged the Little Dog, 'can surely never be known now.'

'You fool!' retorted the Owl, 'that is precisely what makes it such an interesting subject of meditation.'

Some attempt must be made to supply a better answer than the Owl's; perhaps no more satisfactory plea can be put forward than the fascination which attaches to glimpses into the dim past. In a densely trodden, steam-racked, smoke-laden land like ours, it is refreshing to pick up intelligence that here, where the slag-heaps smoulder, the royal hart once couched; there, where the stream, whence all life has been expelled by pollution, winds its dreary, greasy course, the beaver once piled its cunning dome; or again, on yonder hillside, where comes nothing fiercer now than a skulking fox, the bold wolf-brood was reared of yore. One cannot help, at times, speculating on the kind of life our forerunners led, the landscape they viewed, the prizes they strove for. It stirs some of us with more than idle curiosity to stand on the roaring Broomielaw of Glasgow—the brae where the

yellow broom waved not so very long ago—and note the mighty change that has swept over that estuary since Kentigern built his lonely cell in the green woodland glade beside the teeming salmon-river. That glade is now clangorous with unceasing industry; its verdure exchanged for whisky-shops, music-halls, and other less obtrusive concomitants of progress; but still its name Strathbungo[1] recalls the mission work of the holy Kentigern—which work, had it come to naught, into what different channels might not the history of Glasgow have run? In short, forasmuch as it is admitted that all place-names have meanings, and seeing that people will continue to guess and speculate about their meanings, it is natural, and in some degree useful, to proceed on sound rules, so as to arrive at their right interpretation. The intrinsic worth of your fox may not repay all the trouble you take to catch him, but at all events you are likely to ensure better sport by hunting him on scientific principles.

To return to the Romans. Unconsciously that people, though leaving behind them few names in their own language, contributed much to the stability of British names by introducing the art of writing. Unwritten speech changes far more swiftly than we are inclined to remember: directly names or words are written down they become, as it were, crystallised and more or less permanent. Little attention is paid at first to spelling: letters were invented merely as symbols of sound—useful drudges which modern refinement has elevated into tyrants. In ancient documents you shall find the same

[1] Strath-Mungo, Mungo's meadow, the endearing appellative of St. Kentigern.

name perhaps written in half a dozen different forms on the same parchment—all attempts to represent the same sound. It is only quite lately that we have come to attach importance to orthography, and to regard uncertain spelling as one of the chief bars to obtaining a commission in the Army or an appointment in the Civil Service. And it is curious to note how soon letters assumed sway beyond what it was ever intended they should have. No sooner is a name written down than it is liable to have a false meaning read into it. One of the earliest examples of this in Britain is offered by the name York, which the Roman subjects of Severus rendered Eboracum, a latinised form of the Celtic Eburach, which was the name of several places in Western Europe. Now, whatever Eburach—Eboracum—meant originally, it never can have borne the sense which the Anglo-Saxon chronicler suggested when he wrote it *Eofer-wíc*, the wild boar's town. He forgot, or wilfully ignored, the fact that the settlement on the Ure had received the name of Eburach many centuries before a syllable of Saxon was spoken on the banks of that river. *Eofer*, the wild boar, has lent its name to many places, such as Yearsley in Yorkshire—written Everslage in Domesday—Eversley in Hants, and Everleigh in Wilts, all meaning 'the boar's field'; but it was a pure shot, and a shocking bad one to boot, to construe Eboracum as 'wild boar's town.' The blunder has permanently affected the aspect of the name, for although it would have been difficult to trace the evolution of York out of Eboracum, it is easily connected with Jorvik, which was the Norseman's rendering of the Saxon Eofer-wíc. The latinised Celtic form is still preserved in the archbishop's signature—Ebor.

Another effect of letters upon our place-names before the invention of printing must be taken into account. A copyist's blunder sometimes takes the place of the real name. None of the Western Isles bears a more musical or better-known name than Iona, but its creation was a mere fluke. The original Gaelic name of that island was a sound variously represented in early Irish manuscripts as I or Hy. After St. Columba had made it famous by his sanctity and by the religious house he founded upon it, it became known as Icolmkil—*I Coluim cille*—I of Colum of the church. But Adamnan, writing Columba's life in Latin, coined an adjectival form of I, and referred to it as *Ioua insula*—the Iouan island, just as we speak now of the Ionian Islands.[1] Some copyist mistook *u* for *n*, and there you have the pretty and permanent name Iona.

The familiar name of Hebrides had a similar origin. Ptolemy, in the second century of our era, wrote of the Ebudæ, Solinus of the Hebudes (the aspirate was a snare long before the evolution of Cockneys). Now the small *i* (the Greek *iota*) carried no dot over it till the eleventh century; it was a venial offence, therefore, in an early transcriber to mistake Ptolemy's *u* for *ri*, and so turn his Ebudæ into Ebridæ.[2]

No sooner had the Romans evacuated Britain early in the fifth century than the land began to be overrun by people of another speech, which was destined ultimately to obliterate, at all events in Southern Britain, nearly all trace of the languages which went before it. It will be

[1] Of the seven MSS. of Adamnan's work examined by Dr. Reeves, four give the correct form *Ioua*, and two later ones have *Iona*.

[2] Curiously enough, another instance of this confusion occurred in this very paragraph, Solinus having been rendered by the printer Solirius.

borne in mind, of course, that nothing approaching English, or any other branch of Teutonic speech, was spoken in any part of these islands up to the end of the fourth century; but the fifth was not half run before Prosper Aquitanus wrote in his chronicle for the year 441 that 'Britain up to this time is brought widely under dominion of the Saxons by various conflicts and transactions.' The Angles, it is true, did not settle in Northumbria under Ida until the year 547; but long before that the warlike Frisians had infested the Firth of Forth till it was known to geographers as *Mare Fresicum*, and had established several settlements, of which one is tentatively identified with Dumfries—*dun Fris*—the Frisian's fort, mentioned by Nennius as Càer Pheris, just as he mentioned Dunbarton as Càer Bretain, the fort of the Britons or Welsh Celts. Down to the coming of these colonists, the language of the natives of the British Isles, from the Land's End to Cape Wrath, was Celtic in one or other of its forms—Gaelic or Welsh —and all the names of dwellings and natural features were in that language, except those that had been handed down from Pre-Celtic days and the very few which the Romans had succeeded in fixing upon the lands they had conquered.

The coming of the Angles, Saxons, Jutes, and Frisians —branches of that great Teutonic family of nations which had overthrown the civilisation of Rome—brought to pass the extermination, or at least the expulsion and partial absorption, of the Celts or Britons, except in the mountainous regions of Wales and Scotland—our 'Celtic fringe' at this day. Not less industrious than warlike, these Germanic colonists soon settled to work in their new

possessions. The tribe or sept of the restless Celt yielded place to the family and village system of the more business-like Teuton. Around the original *tún* or enclosure of the Saxon farmer a number of dwellings arose. In proportion as he prospered in agriculture he employed more hands or *ceorls*, for whom cottages were built within another *tún*; wherefore the name Carlton, Charlton, or Chorlton occurs more than one hundred times on our maps. The Carlton Club has more or less pretension to be aristocratic: a less complimentary name for it than Carlton—the home of churls—could hardly have been devised by the committee of the Reform itself. Charlcote, also, is met with in most English counties, but the Anglo-Saxon *cota* was most often used in the dative or locative plural *cotum* or *cotan*—at the cottages; hence such deceptive forms as Coatham and Cottam in Yorkshire and Cotton in Derbyshire.

A group of cottages clustering round the original settler's *tún*—the defensive enclosure against natives, neighbours, and wild beasts—soon developed into a village within its own *tún*. There is no better marked class of names than those of English villages, and none, thanks to the invaluable record of Domesday, of which the original form may be ascertained with so much certainty.

When the Saxons had been in possession of our land for about four centuries, a new race of invaders and settlers appeared on the scene, Danish pirates known as Vikings, because they came from the great *vík*, now called the Skager Rack, and Norsemen from the fiords of Norway. The most unmistakable signs of Scandinavian place-names are the suffixes *-by*, *-thwait*, *-thorp*, *-bster*,

and *-setter*. The first three are considered to indicate Danish rather than Norse occupation. The terminal *-by* represents *bú*, a dwelling—Whitby, the white house; Kirby, the house near the kirk; Grimsby, the abode of Grimr, a common personal name. *Thwait* is from *thveit*, humbler than *bú*, meaning a cottage and paddock, and familiar in such names as Applethwaite, Ormsthwaite, and Langthwaite; while *thorp* expressed the hamlet or collection of cottages within a common enclosure, and occurs frequently in certain districts. Langthorpe and Milnthorpe carry their meaning on the faces of them, while in Kettlethorpe is preserved the well-known personal name of Ketyl. The Dutch form *dorp* has been pretty well rubbed into our national remembrance of late in the name Krugersdorp in the Transvaal—the scene of the surrender of Jameson's raiders in 1896. Norwegian rather than Danish are the terms *bólstadr*, a homestead, and *setr*, a dwelling, also a hill pasture, equivalent to the Scottish 'shieling.' The first remains entire in the name of Belster, in the parish of Bower, Caithness, and in various stages of attrition in Lybster, Scrabster, Bimbuster, and Gorabus; while the second is easily recognised in Kirkasetter near Lerwick, and Melsetter in Hoy. Very often these Danes and Norsemen drove out or killed out the Saxon or Celtic population; but where there happened to be room for both, they seem to have lived amicably side by side. The late Canon Isaac Taylor pointed out curious evidence of this in some place-names in the north of England. Many parishes there contain two or more townships, the parish bearing the older name, with the characteristic Saxon suffix *-ton* or *-ham*, while the townships included in it

have the Scandinavian termination *-by* or *-thorp*. For instance, the parish of Settrington in the East Riding contains the separate townships of Settring*ton* and Scaggle*thorpe*; the parish of Cayton contains three townships — Cay*ton*, Killa*by*, and Osgod*by*; Brantingham parish has the townships of Brantingham and Thorpe; and so on, in innumerable cases. In these instances the parish name seems to indicate the older Saxon colony, while the township of Scandinavian designation shows a later settlement of Danes, the two having maintained themselves as separate communities, with independent rating and local government powers.

How vain is the attempt to interpret names from the worn shapes to which ages of oral use have brought them, and how essential it is to hunt up the oldest written forms, a couple of instances must suffice to show. Owesthorpe is the name of a Yorkshire manor: in the fourteenth century this was written Ulvesthorpe, a corruption of the original form given in Domesday — Janulfstorp, the hamlet of Janulf.

Again, the last syllable of Durham has nothing to do with the suffix *-ham*, so common among Saxon placenames. The precipitous peninsula chosen by Bishop Ealdhune at the beginning of the eleventh century as the site of his church was Dunholme, the holm or island of the *dún*, so called by Saxon or Norse invaders, either from the British fort they found there, or from the hill itself, that being the primary meaning of *dún*, which came to mean a fortress because such was generally built on a hill. Then came a Norman garrison to whom the name conveyed no meaning, and who found it easier to pronounce as Duresme. Lastly, the Celtic, Norse, and

Norman-French languages having passed clean away, and English literature and speech having become common to all ranks of the people, clerks wrote it Durham, in misleading analogy to other English names.

Touching this suffix *-ham*, it is not quite so simple as it appears at first sight. It conveys another warning that the real meaning of a name must be sought in the earliest extant documents. In nine cases out of ten it represents the Anglo-Saxon *hám*, a house, the place where a man is 'at home,' and is employed in the same sense as the German suffix *-heim* in names like Rudesheim and Mannheim. It is, in fact, that peculiarly Teutonic term 'home,' for which there is no equivalent in the Latin languages, and which must be expressed in French by periphrasis. Canon Taylor, however, was the first to draw attention to the existence of another Anglo-Saxon word which assumed as a suffix the same shape as *hám*, but with a different meaning—to wit, *ham*, an enclosure. Between these two monosyllables distinction can only be drawn by consulting documents written before people had dropped the troublesome habit of declining nouns. In such ancient writings place-names usually occur in the dative or locative case, inasmuch as a place is seldom mentioned except in the sense of *at* or *to*. The declension in the singular of these two words was as follows:—

Nom.	Hám, a home.	Ham, an enclosure.
Gen.	Hámes.	Hammes.
Locative.	Háme.	Hamme.

Therefore when you find Farnham written as 'at Fearnhamme' and Cheltenham as 'Celtenhomme,' it is pretty

safe to assume that the names meant respectively 'the enclosure among the ferns' and 'the enclosure on the Celt.' On the other hand, as the Anglo-Saxon Chronicle gives Snotingahám and Bocingahám as the current forms of Nottingham and Buckingham, there can be little doubt that the homes of the families of Snoting and Buccing were indicated.

This suffix *-ing* is a very significant one in Anglo-Saxon. It generally denotes 'the family of,' as Buckingham means the home of the family of Bucca; at least that is more probable than the etymology offered by Camden—*bécen hám*, the beechen home, from the number of beeches there in his day. When it is remembered that the evidence is very imperfect in support of the beech being indigenous to Britain, his explanation, though consistent with phonetic laws, appears very dubious. Often the patronymic *-ing* appears without the further suffix *-ham* or *-ton*, as in Reading, the home of the family of Readda, and Godalming, that of the family of Godhelm; just as one would be perfectly understood now in talking of Smith's or Brown's, instead of Smith's farm or Brown's shop.

Canon Taylor suggested that the suffix *-ing*, besides its patronymic sense, sometimes bears a topographic one, and instances Leamington, meaning the *tún*—town—of the dwellers on the river Leam, just as the Vikings were the people of the great *vík*. He did not mention upon what evidence he was going, and the analogy of Cheltenham—the place on the Celt—seems preferable. Notice, however, must be made of a class of village names in which the syllable *-ing* occurs which we should go very far astray in considering to be patronymic. Two very familiar

examples may suffice. Nobody can mistake the meaning of Upham and Newton—the *up* or high dwelling and the *niwe* or new homestead. Uppingham and Newington are not so clear. They have nothing to do with children of an imaginary Uppa or Niwe; they are simply the nominatives Upham and Newton put in the locative case —*upan* and *níwan*. So Upton, Highbury, Heeley are in the nominative, of which Uppington, Hanbury, and Henley are the locative form. Heeley means 'the high lea or field,' Henley 'at or in the high field.'

It would be very easy to multiply examples of mistakes arising out of the survival of Anglo-Saxon declensions suggesting false etymologies. In the East Riding of Yorkshire is a place called Kilham, where the river Hull wells out of the limestone. Here, as in Durham, the suffix *-ham* is altogether deceptive. The name stands in Domesday Book Killom, representing *cyllum*, 'at the sources,' the locative plural of the Anglo-Saxon *cyl*. Similarly Askham, also in Yorkshire, is *ascum*, at the ash-trees, just as Acomb is *ácum*, at the oaks. Hallam, from which the district round Sheffield takes the name of Hallamshire, appears in Domesday as Hallun, probably for *Healun*, on the slopes.

This locative case, which serves so often in modern use as a nominative, appears in many languages. Most of the very numerous names in Scotland and Ireland beginning with *Kil* are compounds of *cill*, the locative case of *ceall*, a cell or chapel. So Kilmorey is *cill Muiri*, 'at Mary's chapel'; Killantringan is *cill shant Ringain*, 'at St. Ninian's chapel,' the *s* being silenced by so-called aspiration. Sometimes the two cases supply alternative forms of the same name: thus in Gaelic Cantyre repre-

sents the nominative *ceann tír*, 'land's end,' while Kintyre is the locative *cinn tír*, 'at the land's end.'

Stress has been laid on the principle that place-names are primarily utilitarian even among the Celts, who are much more poetical than the Germanic race, and that imaginative or sentimental explanations ought to be viewed with extreme suspicion. But exception must be made in regard both to superstition and religion, by one of which always, by both often, human intelligence is largely swayed. So it comes that fairies, devils, witches, and ghosts figure pretty frequently in the topography, especially of lands occupied by the Celt. Shakespeare's Puck—'merry wanderer of the night'—was feared in primitive Ireland as Púca, and is commemorated in many names such as Pollaphuca, Boheraphuca, and Carrigaphuca—Puck's pool, road, and crag. Those who have followed the chase in that paradise of fox-hunters, county Meath, may remember a line of moderate uplands to the south of Trim called the Shee Hills, 'shee' being the correct pronunciation of the Gaelic *sidh*, a fairy, a word which appears in countless place-names, among others the well-known Glenshee in Perthshire. Herein the terminal syllable is the same as in banshee—*bean sidhe*—the female sprite that foretells death in a family by wailing under the window.

Religion may be traced by its imprint upon the whole circuit of the globe. The Spaniards used their once tremendous sea-power not only in sweeping up treasure and annexing continents but in driving the heathen, on pain of death and worse than death, into the fold of Holy Church; and they filled their charts with the names of saints and articles of belief. On

31st July 1498 Columbus sighted three mountains, which he afterwards found to be united in one island. Recognising in this a symbol of the Trinity, he named the new land Ilha de la Trinidad, and Trinidad it has remained after passing into British possession. The year previous, the Portuguese explorer Vasco da Gama had discovered South Africa on Christmas Day, so he called it Costa do Natal—Christmas Coast—and here again British colonists are quite content with the name Natal. In like manner a vast number of places bear the name of Vera Cruz or Santa Cruz—True or Holy Cross; and our own Captain Cook followed suit by calling places discovered on Trinity Sunday by the names of Trinity Bay (Queensland) and Trinity Island (Alaska). Other British captains named new lands after the ships in which they sailed, like 'Adventure' Bay in Tasmania and 'Fury' beach in the Arctic seas.

The last name brings to mind a name on the Scottish coast. Cape Wrath is usually associated in our minds with the angry winds and violent seas which rage round our northern shores; but the name Cape Wrath bears no reference to them, however appropriately it might do so. 'Wrath' merely represents the Norse *hvarf*—a turning-point—for it was there that Norse mariners used to put their helms a-starboard, to run down to their possessions in the Hebrides, which they, coming from the north, called the Sudreyar or southern islands. Even this name Sudreyar, though it became thoroughly inappropriate as soon as the seat of rule shifted from north to south, has not passed wholly into disuse. The diocese of Sodor and Man was once wholly under Norse dominion—the title Sodor is the ancient Sudreyar or Hebrides; but it is

perhaps lucky for the prelate that he is not now expected to conduct visitations throughout the whole of his nominal diocese.

Names of Norse origin seem peculiarly liable to receive a totally erroneous interpretation by assimilation with English vocables. Encountering the name Fairfield in the environs of a modern town, one may safely assign their literal English value to the syllables, but it is far different when you come upon it as the title of the hill next to Helvellyn. The Norsemen had long sway over the Lake Country, and Fairfield here is a corruption of their name *fær fjall*, sheep-fell, just as Faroe (without the pleonastic 'Islands') represents *Fær-eyjar*, sheep-islands. Again, the title Biggar conferred on a town in Lanarkshire conveys no hint of comparison in size with its rivals, but is plain Norse *bygg-garth*, barley-field, as may be easily seen by noticing the better preserved forms Biggarts in Dumfriesshire and Biggart in Ayrshire.

To go further into the origin of place-names—to follow the glimpses they afford of bygone races and their habits, of wild animals, now rare or extinct, which once peopled the forests carved by civilisation into farms—would lead me to intolerable length. Let me wind up with three cardinal principles to which he who embarks on a somewhat fascinating study should ever hold fast.

First, let the simplicity of origin be assumed before taking up the wild and poetical explanations which have so much attraction for some minds, but which generally have no foundation. When primitive, or at least imperfectly civilised, people settle in a new country, they don't sit down and invent names for the different

localities it becomes necessary to indicate. The names suggest themselves from some characteristic of the place, some incident or occupation, or some individual who dwells in or takes possession of a tract. They come without conscious mental effort, such as all men instinctively avoid; they alter under use in compliance with well-known phonetic laws arising out of the unconscious avoidance of physical effort in pronunciation, to which all of us unwittingly yield.

Second, in nine cases out of ten place-names are compound—made up, that is, of a substantive and a qualitative. The first denotes the generic object—a hill, a house, a river, a what not; the second some specific attribute, indicated by a man's name or perhaps a beast's, or by an adjective denoting position, colour, contour, or some other characteristic. When the distinction between these two parts has been settled, the first obstacle to understanding the name has been overcome. Well, the stress invariably remains on the qualitative syllable, which, in English names, usually precedes the other. Thus you say Òxford, Mìlnthorpe, Hànbury—not Oxfòrd, Milnthòrpe, or Hanbùry. You may rely on the fidelity with which this pronunciation has been handed down in each locality from generation to generation: it is a sure key to the construction of the name, though railways are apt to import obscurity into it. Thus Carlisle—*cær Llewellyd*—being a Celtic name, has the qualitative last. The natives call it correctly Carlìsle, but railway-people and southerners may be heard talking of it as Càrlisle—which is wrong.

As has been said, according to a general rule, the Celtic qualitative follows the substantive; but there are ex-

ceptions, and one of these may be cited to show how faithful an index of the qualitative is afforded by the stress. Mòrven and Benmòre both signify the great hill —*mór bheinn* and *beinn mór*, and in either position the qualitative *mór*, great, carries the stress. A misplacement of stress may not seem to involve very serious consequences, but here is a case in which not only is the old meaning destroyed thereby, but a false one imported. Kilmacòlm, a village in Renfrewshire, with the stress emphatically on the last syllable, is clearly *cill mo Coluim*, the chapel of dear Colum[ba]. The railway company, having cause to erect a station there, choose to print the name Kilmalcolm, and forthwith their servants shift the stress to the penultimate—Kilmàlcolm. Immediately the sense alters; it becomes *cill maoil Coluim*, the chapel of the servant of Colum[ba].

Lastly, in pursuit of the origin of place-names let no man be cocksure. Not long ago I rushed into print to explain the much-disputed name of Torvalvin in Knoydart. I had been to the place, a conspicuous rocky knoll on the flank of a bare mountain. What could be clearer? —*torr mhaoil bheinn*, the knoll of the bare hill.[1] See what a plain word put me down! It seems the name is by no means ancient. It is not many years since a dumb crofter lived under this knoll, named, like our old friend Balbus of the walls, in Gaelic speech *balbhan*, and commemorated in Torvalvin, *torr bhalbhain*, the dumb man's hill!

[1] *Mh* and *bh* represent in Gaelic the sound of the English *v*.

XI

How Salmon-pools are named

The contemplative man in pursuing his special recreation—angling—must often fall to speculating upon the origin of the names attached to salmon pools in a river. Often they consist simply of the name of the adjacent land or farm, as the far-famed Birgham Dub on the Tweed, associated for all time with the treaty of Birgham, source of three centuries of war between England and Scotland. Others bear descriptive titles, such as, a mile or so below Birgham, that excellent cast the Kirkend, where the river chafes against the rocks on the English banks which support the west end of Carham church. But who shall unravel the secret hidden in the names of other salmon-pools on Tweed—Bloody Breeks, Flummie, The Webs, Jock Sure, The Hen's Leg, and so on? They are indelible; so long as men shall continue to cast angle in these waters they will continue to use these names and never seek to invent others.

Occasionally, at very long intervals, the need arises for a name to distinguish a new pool from its fellows, and the commonest, because the simplest, expedient is to associate it with the lucky angler who first lands a salmon from its depths. It is a sure road to immortality for that individual, but not an easy one. *Non cuivis contingit*—new salmon-pools resemble the pool of Bethesda in this, that some other fellow generally gets there before you, and that fellow's name will remain a household word for unnumbered centuries. Just opposite Dryburgh Abbey is a cast known as Jockie's Hole; who this particular Jockie was, none now may know or tell; but Jockie's name is as

sure of immortality as that of Walter Scott, whose last resting-place is within a couple of hundred yards of Jockie's Hole. Jockie earned fame, perhaps, by one of those flukes which impart so much of its fascination to the angler's craft, and perhaps I may be permitted space to chortle mildly over a happy accident which has lately brought similar distinction upon me.

Well, this narrative, at all events, begins with a blank day. We had fished all one April day—a friend and myself—without stirring anything on two of the best beats of the river. The water was in perfect trim, we knew there were fish in it—at least I felt sure they were there—but the sun blazed fiercely from its rising to its setting, and kept them down. Thinks I to myself these are Norwegian symptoms—a full river and a blazing sun; why don't we adopt Norwegian precautions, fishing early and late, and do our sleeping in the day-time? My friend would not hearken. He vowed the fish had not come up. So next morning I sallied forth alone before 6 A.M. It was the 20th of April (1901), so it was full light, but the sun was still behind the shoulder of Lamarkan. The grass was white and crisp with frost, and the water had fallen a foot in the night.

A couple of hours later, by which time the sun was high in the heavens, I was returning to breakfast with a couple of lovely spring salmon in the bast basket, when my path took me along the verge of a cliff overhanging a rough stream which I had often eyed curiously, thinking it a likely harbour for fish. But at the foot of the cliff the water was thickly overhung with big alders, leafless as yet, but presenting an almost absolute veto to any attempt at fishing the place. No human being, I firmly

believed, was ever so foolish as to attempt to put a fly over it; even had he succeeded in doing so it was obvious that he could not hope to secure a fish, supposing one should hook himself, for the trees grew close and bent low over the current, which sweeps deep and strong along the near bank.

However, the devil is always at one's ear to suggest easy roads to ruin, and albeit past experience has made one very shy of listening to his suggestions, on this occasion I lent him a willing ear. It would be a grand thing even to raise a salmon where no man had done the like. As to landing him time enough to think of that later.

Celui qui n'a jamais eu ses moments de folie est moins sage qu'il ne le pense. I felt I was doing a very silly thing. Visions of a good breakfast awaiting me at home presented themselves in glowing colours. The utmost that could result from such a harebrained attempt was to hook a fish and let him break the line, and every angler must answer for himself whether it is better to have hooked and lost than never to have hooked at all. Salmon are probably unanimous against the proposition. But the sun had not yet struck this part of the stream; it looked uncommonly 'fishy.' I descended the cliff and found myself among the alder stems. By clambering about twenty yards upstream I discovered a grassy ledge in the rock face, about six feet by two, opposite which was an opening in the screen of alders some six yards wide. To cast was impossible, but I managed to flop out enough line to let the current do the rest, and the Black Ranger, which had done much good work already that morning, was presently swimming twenty

ON THE MINNICK.

LONDON EDWARD ARNOLD 1901

yards below me. Through the network of drooping branches I saw a slight commotion. 'That's him!' quoth I, with better emphasis than syntax, and sure enough a very vigorous fish was fast. Then I realised the full hopelessness of my plight. Behind me was the cliff, a sheer rock forty feet high; to the right and left stood the alders, making movement impossible in all directions save one—namely, into the roaring stream. Meanwhile, the salmon had made free with my predicament, and was careering about in the pool fifty yards below. Twice, thrice, I reeled him up into the strong water, and each time he dashed away down stream. External help was out of the reckoning; the loudest halloo, even if it were heard above the roar of the waters, could only fall on the unsympathetic tympana of curlews and cock grouse; and as for landing that fish unaided, it was not to be done, for I was standing on the only foothold between the top of the cliff and the margin, and that was ten feet above the water. Not a human soul was likely to pass that way till the angler whose beat was there on the morrow. . . . By Jove! To-morrow's Sunday! I was faint with hunger already. I should die of exhaustion before Monday. No, bitter as it was to part with such a pretty fish, there was nothing else for it, and I braced myself for the inevitable.

At least I tried to do so, and utterly failed. Never but once have I had to pull deliberately on a fish till the line broke, and that 'once' has permanently tinged my character with melancholy. There was another way, but it was not a seductive one. This was to try and cross the water, which was of doubtful depth, undoubtedly cold, very strong, and so rough that it seemed improbable a man could keep his feet in such a torrent. The further

bank was fairly open; once over there and the fish was mine, if the hook held. To attempt to land a fish on the opposite side of a stream to where he is hooked is sometimes a risky experiment. The strain on the hook is changed to the opposite direction to that in which it was embedded, and often pulls it out. However, by this time the salmon had tired himself, and was lying still in the quieter water below me. I slipped cautiously down the rock into the river, and straddling wide, the best way of resisting a strong current, slowly felt my way into mid-stream. The water turned out no deeper than waist-high, but it was mighty strong, very cold, and the bottom very rough. I shall not easily forget the sense of triumph with which I stood at last on the far bank. Hitherto the balance of odds had been enormously in favour of the fish; now it was not less so on my side. In a few seconds I had the gaff in him, a pretty twelve-pounder, and then set out on the return journey through the stream to regain the property left on the other bank.

That anonymous pool must henceforth bear a name, and if there be justice in the affairs of men, that should surely be his who killed the first salmon therein. *Sic itur ad astra!*

XII

The Magnolia

Bicycling one charming morning in April (1902) between Woking and Pirbright, I saw afar off what I took to be a lofty white-washed gable gleaming in the sunlight. A turn of the road shut it out of sight; a few hundred yards further another turn brought me close in front of this object. I dismounted with a feeling akin to awe. Here was no gable built with

hands, but a pyramidal tree loaded with great lily-white blossoms, one of the fairest that ever eye of man beheld. It is difficult to describe what I felt without seeming to exaggerate; doubtless it was enhanced by surprise from the suddenness with which the winding road brought me into the presence of such dazzling beauty. It had been no cause for wonder had I found a crowd collected from far and near; the surprising thing was that not a soul seemed to care to step a few yards out of the way in order to enjoy the marvellous display. We spend lavishly in tawdry street decoration on occasions of rejoicing; quite right too, though the effect obtained is often no more than so-so; but here was a scheme of decoration, costing nobody a penny, but exquisite in effect, and attracting no more attention than a common haystack.

Well, I was alone with this splendid tree. Solitude lent an air of unreality to the scene. The cattle browsed unconscious beyond the hedge; the birds were busy in musical discussion about household affairs; not a living creature had any attention to spare except myself. Musing, I began to wonder why we do not ensure greater regularity and frequency in such floral treats. The tree was the common *Magnolia conspicua*—the Chinese species which puts forth its large, fragrant chalices of ivory white before the leaves develop. It is almost as hardy as a horse chestnut; for, although the gardening books recommend it for the south of England, it succeeds perfectly well north of the Tweed, and, where it grows, it never fails to flower abundantly. Why is it not more commonly seen? Our new allies, the Japanese, are intensely practical and business-like, yet they have their annual feast of semi-religious thanksgiving when the cherry-trees come

into flower. We need scarcely feel ashamed to take some pains in securing better effects than are usually attained in arboriculture.

If you ever visit Orleans on a bicycle, and extricate yourself from the excruciating combination of tram-rails and cobble-stones which render that historic town a petty purgatory, you can run three or four miles north-east on a fair highway to the Château de la Source. It is a country-house of no particular architectural merit, but is greatly to be admired for its exquisite situation. A high, steep terrace separates the mansion from a lake, crystal clear, source of a tributary of the Loire. Calling one spring morning—*voilà des années*—at the lodge of this château, we left our bicycles within the gate and committed ourselves to the custody of a park-keeper of misanthropic aspect. Evidently he had experience of the race of 'Arry and 'Arriet, for, as he marched us in dead silence round the demesne, he kept a sidelong eye upon our movements, as though expecting one of these 'goddams' to whip out a knife and deface a smooth-rinded beech with cockney initials. Not a word said he until, at the appointed place, he stopped short and broke silence. 'Miroir du château!' quoth he, extending his hand over the lake, wherein, true enough, the building was reflected with faultless fidelity. The château, as I have said, is not imposing, neither does it greatly gain by reduplication; but the scene was redeemed from commonplace, and given a lasting place in remembrance, by reason of a noble magnolia on the narrow terrace between the house and the lake. It was loaded with snowy blossoms, and gave the *miroir* its principal charm.

May

XIII

NEVER was the 'blackthorn winter' better illustrated than it has been this season (1902). The blackthorns began to deck themselves in their frosty splendour in the third week of April; the chilly nights and cold winds, in which they seem to revel, have prolonged their period of bloom almost to encounter the greater glory of the hawthorn, so that, returning to the southern Scottish uplands at Whitsuntide, I find the snow which still whitens the higher crests reflected in the valley, and along the rocky river-banks from the sloe bushes which there do greatly abound. Moreover, the blossom is more abundant than I remember to have seen it before; to be followed, doubtless, by myriads of sloes—'buckies,' as the country folk call them hereabouts—an unkindly fruit, rejected alike by beast and bird. I doubt whether even pigs, with their philosophic indifference to quality in diet, could be induced to partake of sloes; only man, the omnivorous, indefatigable in search of novel sensation for his palate, and reckless as to the ruin that may be wrought in his digestive apparatus, has invented an astringent abomination known as 'sloe-gin,' in which certain persons profess to perceive delicacy of flavour. In my opinion it were more rightly named 'slow-poison'—slow, but very sure.

The Blackthorn

XIV

Why certain Birds mob others

Cuckoos are much in evidence on the moors just now. I watched a pair yesterday flying in circles after a somewhat unusual manner, apparently the male pursuing his mate, or (as the unprincipled habits of the cuckoo render rather more probable) somebody else's mate. Ever and anon as they flew some little bird or other—here a lark, there a yellow bunting—rose out of the heather or the thorn bushes, and pursued the cuckoos till they were clear of that quarter of the ground. What is the impulse or fascination which makes small birds act in this way? If they recognise the cuckoo as the enemy which furtively deposits in an alien nest an egg containing a creature which will ultimately destroy the legitimate brood, why do they betray the neighbourhood of their own nests by flying out in such vociferous flurry? If, on the other hand, they are deceived by the hawk-like mien and flight of the cuckoo (I have myself shot a cuckoo in mistake for a sparrow-hawk), surely the instinct of self-preservation should prompt them to lie low, but neither for cuckoo nor hawk will they do so. On the contrary, they hang upon the enemy's skirts so long as their power of flight enables them to do so. Their hatred seems to overcome their discretion; they are willing to risk the sparrow-hawk's swoop for the gratification of uttering their execration so near that he cannot fail to hear it, and to be annoyed.

I never could think of an explanation of the similar manifestation of feeling by rooks towards herons, until it occurred to me that possibly herons, in times when fish and frogs are hard to come by, may conceive an un-

hallowed hankering for newly hatched rooklets. I have not been able to verify the suspicion, but some such ground probably exists for the inveterate antipathy entertained by the population of the rookery for that of the heronry. It is a common thing at this season to see a heron closely pursued and evidently much annoyed, if not alarmed, by one pair or several pairs of rooks. The rook, although his wing is round and the primaries are set very open at the points, is very powerful and active in flight, and when excited by the presence of a heron performs daring feats of wingmanship.

XV

Some authorities have pronounced that long, pointed wings are essential to great powers of flight, but there is another bird, the lapwing, whose wing is designed on the same plan as the rook, and is no mean aeronaut. Not only can lapwings, like rooks, undertake exceedingly long flights, but they often remain at great heights for a long period—an hour or more—for no conceivable reason but for the pleasurable exercise of their pinions. The lapwing, too, a gentle, inoffensive creature by nature, carries a warlike front against creatures which it suspects of designs upon its eggs or young. Arms it has none, for its soft bill and feeble feet are impotent to wound; yet have I seen a pair of lapwings drive a pair of marauding black-backed gulls clean off the bit of moorland where the lapwings had their nest. The gulls, six times the bulk of the lapwings (a full-grown blackback covers six feet in span of wing), can have had nothing to fear; their powerful beaks would have made very short

Lapwings

work of their assailants could they have caught them; but the lapwings were too nimble for them; shrieking wildly, they dashed headlong at them, whirled away, and returned to the charge with such bewildering rapidity that the great birds sullenly relinquished their hungry quest.

More than once in these notes I have expressed apprehension lest the increasing practice of killing lapwings and sending them to market, added to the greatly increased demand for their eggs, should seriously diminish the number of these most useful birds frequenting our arable land. I have always maintained that taking their eggs was legitimate and harmless, because the birds, having lost their first laying, produce another which has a better chance of protection from the growth of young corn and other herbage. An interesting corroboration of this comes from a correspondent in Lanarkshire, who testifies to the extraordinary diligence in taking plovers' eggs which has been shown of recent years owing to the good price offered by poulterers. At first, he says, he felt concerned lest the birds should become less numerous in consequence, and he was as much puzzled as pleased to find that the reverse has been the case. Careful observation has convinced him that, so far from diminishing in number, the spring flights of lapwings—that is, the lapwings which arrive in Lanarkshire to breed—are steadily becoming larger. The solution which he offers of this apparent paradox seems a reasonable one. He suggests that in days when nobody sought for plovers' eggs the birds were at liberty to sit upon their first laying, which is generally in the latter half of March. Many of these early eggs were destroyed by frost; the parent continued

to sit upon them so late that her power of producing a second clutch of eggs was gone; whereas, nowadays, when nearly all the first laid eggs are taken, the birds go off and lay again under more propitious circumstances. If this be so, we may eat our plovers' eggs with a clear conscience; but still, not only in mercy but in self-interest, county councils would do well to prohibit the slaughter of lapwings, because it is the winter flight, the birds which are now breeding in more northern latitudes, that confer most benefit upon our farmers by the destruction of grubs and mischievous insects.

XVI

Talking of lapwings, has it occurred to many people to notice the strange indifference with which the peasantry of most parts of the British Isles regard some of the articles which find a ready sale in cities as delicacies? This is the more remarkable in the case of things like plovers' eggs, which any country boy may collect for himself. Of course, the high price which plovers' eggs now command, and the numerous agencies throughout the land where the price may be obtained, suggest to the said boy to sell rather than to eat the eggs. But the high price is an affair of recent years —at least in certain remote parts of Scotland with which I am well acquainted; and I think I may affirm with certainty, that at no time within the last half-century did plovers' eggs form any part of the cottagers' diet, nor, for that matter, of the farmers'.

Plovers' Eggs and others

Plovers' eggs are followed by the later and richer luxury of the eggs of the black-headed gull (*Larus ridibundus*). This bird breeds in dense colonies on the

shores and islands of certain lakes, and sometimes, where no lake now remains, upon a moss which has grown up in the bed of some primeval sheet of water. Thousands of years may have passed since the ancestors of these gulls, attracted to such a spot by the expanse of sparkling waters, chose its banks as their breeding-ground. Now, it is well known how conservative most birds are in haunting the same locality, even after its physical features have undergone sweeping change. Professor Newton has recorded an instance of this characteristic in the stone-curlew (*Odicnemus scolopax*), perhaps of all British birds the one that most affects bare and open wastes. From immemorial times they had bred upon a heath at Elveden, in Suffolk, whereof many years ago some three hundred acres were planted. A pair of stone-curlews continued to nest on the traditional spot long after it had become the centre of a flourishing woodland. Even so, these black-headed gulls continue to lay their eggs in sociable communities upon what were once the shores of and islands in a lake, notwithstanding that the formation of peat has filled up that lake, and dry heather now covers the expanse where once the wavelets glittered and tinkled.

Nothing is easier than to collect the eggs of these gulls, for they are laid closely over a limited space of ground, and have not to be painfully hunted for like those of the less sociable lapwing. The yolk is larger and of a richer orange than in the plover's egg; the flavour is much the same: yet have I seldom heard of shepherds and moor-land cottars supplementing their monotonous fare with these seasonable delicacies. Nevertheless, the eggs of black-headed gulls are finding their way to the market in

increasing numbers. There has been a regular trade in them from Norfolk for many years. Mr. Stevenson, in the fourth edition of Yarrell's *Birds*, describes the process of collecting them at Scoulton :—

'Two men are employed to collect three days a week, picking up every egg they can find, and generally at the rate from 1500 to 2000 a day; but when in full laying and left undisturbed for two clear days, between 3000 and 4000 have been taken in one day. From 10,000 to 20,000 eggs have been obtained in this manner in different seasons. In 1870 the eggs sold on the spot at 9d. to 1s. the score.'

In some northern counties the eggs of black-headed gulls have received protection from county councils, under the Wild Birds Preservation Act; but in one instance, at least, this protection has been withdrawn this year, owing to the excessive increase of the species.

XVII

'Twixt Spring and Summer

The melting of May into June, especially if accomplished under weeping skies, was Christopher North's idea of the angler's halcyon. But Christopher had trout-fishing in view: the salmon-fisher has cause to regard these weeks as a kind of interregnum between the run of early fish and the coming of grilse. In most rivers the survivors of the spring fish have become worldly wise, wagging their tails softly and derisively winking (so far as creatures without eyelids can be understood to wink) as Jock Scotts, Silver Grays, Dun Turkeys, and Blue Doctors continue to float and skim, jerk and wobble overhead. Not a few of these fish have twinges of toothache as they behold the well-

remembered frauds; wind, sky, and water may all be of aspect most auspicious, yet the angler often returns at night with a burden on his shoulder less by the weight of a vanished luncheon and a drained flask.

Howbeit, some rivers are exceptionally favoured, into which salmon continue to run all through May and June, and it was on the last day of the former month that I set out betimes to tempt fortune on the upper waters of the Cree. This river, recently purged of all netting, and reserved by an association of six members entirely for angling, flows into the Solway Firth through a tidal channel eight miles in length, and is formed by the confluence of the Minnick with the Cree proper eight miles or thereby above high-water mark. The Minnick, flowing from a group of deep lochs in the folds of the forests of Buchan, is the larger of the two confluents, and runs with a current as clear as any chalk stream; the Cree, on the other hand, strained from a vast expanse of peat moss and moorland in south Ayrshire, is clear also, but with the clearness of strong tea—golden brown in the shallows, dark as onyx in the rocky linns. For some occult reason, ten fish ascended the smaller confluent in the spring of 1900 for every one that entered the nobler Minnick. The course of the Cree for several miles above the junction is exceedingly troubled; the river flows between precipitous cliffs, tumbles over huge boulders, and sleeps for brief intervals in profound, black abysses locally known as linns. At the top of about three miles of such a channel a formidable fall opposes itself to ascending fish, only to be negotiated by them under certain conditions of water through an imperfect pass carved in the solid silurian rock under direction of Frank Buck-

land of happy memory. Immediately under this fall, and for some hundreds of yards below it, salmon collect in great numbers; you may see them lying on the bottom like motionless shadows, or roving restlessly about, discontented with their quarters, and pining to get to their beloved birthplace above the barrier. Why they should so desire is one of the inscrutable traits of salmon nature. True, there are good spawning-grounds up there, but this is but the month of May, and there is no business to be done on the shallow 'redds' before the end of October at earliest. The fact is, salmon are like human beings and every other creature; they have an unconquerable longing to get 'home,' and home is the place one remembers in childhood. It might be supposed that to a cold-blooded animal the sparkling blue sea were preferable to narrow, tepid pools during the summer heats; anyhow, that more comfortable lodgings might be found in the ample lower reaches of the main river. Not so. The salmon resorts to the sea because there alone can he find provender to sate his prodigious appetite; so long as that appetite is in good repair he suffers the inconvenience of salt water, and is content to run hazard of porpoises, seals, and other formidable oppressors; but no sooner has he eaten his fill of herrings and other fine fare, and his skin is stretched to its utmost limit, his muscles crammed with enough nutriment to carry him through a long physiological fast, than his thoughts turn homewards, the salt becomes intolerable to him, and he craves the pure fresh volume of his native river. That seems to be his motive in leaving the sea; but why he should run through the great river pools and hurry impetuously into the small head-waters, often ludicrously disproportionate

to his own bulk, is one of those problems which still await solution.

It may be safely predicated of the salmon that he has no eye for the picturesque. That salmon-pools of good repute are often part of a lovely prospect is a mere accident, arising out of the beauties which running water carves out of the solid earth. Just as often as not the favourite lodge is known to the angler by some such landmark as a barbed-wire fence of evil aspect separating a vulgar turnip-field from a flat, uninteresting pasture. But here, in the upper waters of the Cree, no fish could find an unlovely lodging if he would. Of all Scottish salmon-rivers known to me, if it be not the Findhorn, none excels these half-dozen miles of water in romantic beauty and charming association of rocks and trees, ferns and flowers. We are scarcely one hundred and thirty feet above the sea, nor a dozen miles from a railway, yet the solitude is perfect; no plough has profaned the virgin moor; of houses, after passing the little kirkyard and manse of Bargrennan, deeply cushioned in a coppice of native oak, there are none to be seen, save a farmhouse on the distant sky-line and a far-off shepherd's cot or two. The very flowers are different from those of the lower ground; here no marsh-marigold gilds the marges of the burns; its place is taken by the globe-flower (*Trollius*), prized by tasteful gardeners among the choicest alpines. Its blossoms are of pure, true gold, without the ruddy alloy which tinges the sovereigns of our mint and the flowers of marigold. Primroses and blue hyacinth sheet the banks here, as on the plain, but it is the little mountain cudweed that stars the rocks with snowy plumelets, closely resembling in miniature its near

relative, the Swiss edelweiss. It is the last day of May, yet the oaks have no more than a thin veil of golden olive foliage; ill betide the fugitive monarch who should trust to one of them for hiding in this backward season. As for the ash, it stands naked and wintry still; positively the only visible change it has made consists in the strong sunshine of the past week having mellowed its black buds into olive green. What a true eye Tennyson had for the aspects of nature, and what dainty use he made of his knowledge of them! Thus of the Princess—

> 'Why lingereth she to clothe herself in love?
> Delaying, as the tender ash delays,
> To clothe herself when all the woods are green.'

All this is very fine, no doubt, but, quoth the reader, it has nothing to do with salmon-fishing. No, but he must be either more or less than human who can cross the moor this glorious morning, when spring is making a last surrender to summer, and pay no heed to all the loveliness around. Indeed, one may talk or scribble about salmon-fishing to-day; but fishing for salmon might seem to one who has no experience of the Cree an enterprise as bootless as might be. For the weather has been for a week in the mood which meteorologists are pleased to term anticyclonic: not a drop of rain has fallen, it has been intensely hot, and the river has shrunk to summer level. Cattle are collected ostentatiously on the tops of all accessible knolls—sure symptom of settled weather—and the morning haze gives token of speedily yielding to an imperious sun.

Nevertheless, there is known to be good store of fish in these deep, rocky pools, and there are certain throats

and channels where the current is always brisk, even in the most prolonged drought; therefore a small double-hooked Black Ranger, on fine but strong gut, directed by a light fifteen-foot rod, is soon swimming where the water flows swift and dark between two precipitous cliffs. Before following it in its fortunes, let me pause to notice two points in the salmon-fisher's equipment about which professional opinion is deeply divided.

First, as to the aforesaid double hooks. There are men of experience and skill who have given them fair trial, yet have discarded and decry them. They distrust them, alleging that one of the hooks often forces the other from its hold. It is not easy to perceive what evidence could be had to bring them to that understanding, but they are quite convinced about it; and the tackle-makers tell me that, except for the Tweed, double-hooked flies are seldom ordered.

Well, to me this is wholly incomprehensible. It is very many years since I first used double hooks, and as I used to dress all my own flies in those far-off days, I had every reason for prejudice against the novelty, because as every fly-dresser knows, it is much easier to turn out a tasteful article upon a single iron than upon a double one. But I soon became convinced of their merits, and remain so to that degree that I never feel happy in using a single hook of less than an inch and a half in length. Short of that, a double hook of the square Pennel bend anchors itself so securely in the fish's mouth, that in playing him one is absolved from that gnawing anxiety about the single steel cutting its way out, which embitters some of the most exciting passages in the sport. In this season down to the present date (1st June), I have landed thirty-

five clean salmon with the fly, besides very many kelts; only in one single instance, that of a small kelt, has a fish escaped from double irons after being hooked and held. On the other hand, I must be just to single hooks by mentioning that half of these fish were taken early in the season upon large single hooks. It serves no good purpose to use double hooks when the fly exceeds an inch and a quarter in length.

As to the other point, the particular pattern of fly, I have mentioned that I mounted a Black Ranger, but that was not from any predilection for that special lure, but because it happened to be the first that came to hand of what seemed an appropriate size. It is no exaggeration to declare that any other fly of similar proportions would have been put on duty with exactly the same degree of confidence. The greater the number of fishing seasons behind me, the less credence can I yield to the supposed preference of salmon for one fly to another. Why, what is the lesson to be learned from this very river Cree? Just this—that it is fishers, not fish, that are discerning in dubbing, silk, and feathers. When I first fished this river, thirty years ago, I was warned against displaying anything but 'Cree flies'—sober-hued articles, with bodies of black or brown mohair and wings of gray mallard or dun turkey. At the utmost, a blue-throat hackle was the extreme limit of brilliancy which could be sanctioned. Time went on; gradually the spirit of innovation crept even into this remote corner of Scotland; some restless and headstrong reformer, setting at naught the warning of local wiseacres, caught salmon, first with a Poynder, next with a Childers, and forthwith Poynder and Childers were found in every fly-book by the water-side.

Neither of these flies are very startling combinations, but the matter did not stop there. The leaven spread until at the present writing not the oldest gillie on the river would utter a murmur though you should choose to attach to your line a Parson, a Wilkinson, or whatsoever hath more gaudiness and glitter than these; nay, he would be exceedingly apt to suggest a Jock Scott off his own bat. In fact, Tweed flies are all the fashion on the Cree now, although the time was—in the days of William Scrope, for example—when boatmen upon the Tweed accounted for the decline in the salmon-angling by the hypothesis that the use of bright Irish flies terrified the fish and drove them back to the sea. Who is there that, reflecting rationally as an intelligent man (no synonym for angler), can seriously doubt, if the Tweed or the Cree were fished again with the infallible dun-turkey wing of our grandsires, to the exclusion of all modern meretricious wares, that the number of salmon taken by the fly would be exactly the same as if all the resources of Messrs. Wright and Forrest were put in action? Not I, i'faith! for here is the secret of local patterns. They took their rise in far-off days, when locomotion was difficult and fishers were few. The man who took most fish was generally in humble circumstances, living by the water-side. His flies were fashioned out of the material at his hand—the gray drake or the 'bubblyjock' at his door furnished the wing; chanticleer on the dungstead yielded hackle; and as for the body—why, a few strands from a piece of old carpet gave one that could not be beat. As salmon-fishing became more and more a rich man's fancy, these homely patterns rose into fame and were considered indispensable to success; even to this day the very first question asked

by nineteen out of every twenty anglers upon visiting a new river is 'What are the right flies?'

Meanwhile, should the fancy ever revert to the ancient type of fly, one at least of the old patterns will be very hard to supply—to wit, the dun-turkey with light tips. The bird which gave the feathers is wellnigh extinct. Five-and-twenty years ago the chances were in favour of the 'bubblyjock' in a Scottish farmyard being of a sandy brown, with the edge of each feather upon his back passing into whitish fawn. Nowadays one never, or hardly ever, sees such a bird. All turkeys show the dark metallic tints of the wild American strain. It is interesting, by the bye, to note that Ireland was the birthplace of brilliant salmon flies. To this day one hears them spoken of in Scotland as 'Irish patterns,' which may be taken as evidence that the artistic sense of the Celt is not yet extinct, and that the delight and skill which he displayed of yore in bejewelling the pages of the 'Book of Kells' now find gratification in dainty designs for salmon flies.

Well, I have wandered unpardonably from my text; let me hark back to the Linn of Bargrennan, where I made great parade of preparation for business. It is an awkward place to fish, for the cliffs are high and perpendicular, and stand-points are few and far between. However, I clambered down to a secure foothold, and began flinging the little Ranger, gradually lengthening the line till the power of the fifteen footer was about at its limit. Then something happened: the line stopped—a sunken rock, was it? No! There was a delightful sensation of kicking—gentle at first, then more vigorous. *In him!* and the next question was how to get him *out of* that swift, deep water. Well, the fish must tire himself first;

and he did his utmost in that respect, for he buzzed away forty yards down the cañon, and round a bend out of sight, where he set up a prodigious splutter that I could hear, but could not see. It was an anxious quarter of a minute, for I was a fixed point, unable to stir from the ledge where I stood, and if the single gut happened to catch on a rock angle, all would be over for the day, seeing that the sun was on the point of coming out strong.

It is well to bear in mind that if you want to coax a salmon up-stream when he is pushing into a dangerous neighbourhood, the surest way to do so is to keep a very light pressure upon him. Where there is nothing to fear, never spare him; from the first moment he is hooked put every ounce of strain upon the tackle that you safely can. But if a fish threatens to leave a pool whence you cannot follow him, just feel him and no more, till he returns to the place where you rose him, which he will usually do if he does not catch sight of you. These tactics answered in this instance. Foot by foot my fish moved upwards again; then there was a scurry and a tussle on a short line. There was no shallow to tow him into, but he gave a chance as he lay for a moment exhausted on the surface: stooping down, I put the gaff gently over his back, drew it firmly home, and scrambled up the rocks, dragging with me as pretty a little fish of eight pounds, fresh from the sea, as a man might wish for.

XVIII

The Black-backed Gull

Gulls are very busy on the shallows during the drought, chiefly the pirate black-back and the black-headed. The latter bears a fairly good character minnows are his delight, though he may not be

scrupulous to a scale in a matter of young salmon fry, and floating flies provide a great deal of his daily diet. But the black-back's character is beyond redemption, and he takes a heavy toll of salmon smolts on their way to the sea. The migration is at its height just now, and yesterday I watched a pair of these handsome rascals busy at work on a convenient ford. Presently, through the glass, I saw one of them had seized something bigger than a smolt. A lively struggle went on in the shallow water; then up came Sir Black-back's head, his powerful yellow bill firmly clasped upon an eel about six or eight inches long. Firmly, but not firmly enough; the eel twisted itself round the bill, then round the bird's snowy neck, which gave it a fulcrum, so that it drew itself out of the vice and dropped into the water. Up went the gull on the wing and pounced on its quarry afresh; the same thing was repeated again and again. At last the luckless eel was pinched into comparative weakness; still wriggling vehemently it was swallowed whole; the gull flapped off heavily to a rock hard by, and sat there enjoying, no doubt, ecstasies of gourmandise unknown to those who have never swallowed an eel alive.

June

XIX

A City of many Waters

STRICTLY speaking, a city of one water only; but so ingeniously has this compliant river been dammed here, sluiced there, coaxed into a new channel on that side, and wheedled into a dozen conduits on this, that one cannot go far in the streets without hearing a gurgle or a rush, and, peering over the brick parapet beside the way, beholding a limpid current, wherein great, pale trout lie fanning themselves among the waving water-weeds the livelong summer day. It is well for Winchester that the Itchen has its reservoirs so deep in the chalk ridges that the rain falling on them in winter does not find its way into the channel till the following summer. The destructive floods which scarify the land and scare the dwellers therein only come after reckless, greedy man has stripped the uplands of wood, placed there to arrest the sudden glut of water. The mighty sponges of the chalk he cannot spoil—only nibble them into pits here and there, or scratch them with railway cuttings. So the Itchen flows on now with much the same current, liberal through all summer drought and committing no excesses in winter, as it did when the Roman galleys first swarmed into its estuary.

Advancing up the river, the practised eye of the

tribune of the Legion fixed on a bare chalk down, marking the verge of the Andredesweald—the primeval forest, stretching eastward a hundred and twenty miles—as the best strategic position in the valley. This down men now speak of as St. Catherine's Hill; but the intrenchments thereon were known to their Celtic garrison as Caer Gwent —the white stronghold—and the invaders appropriated both the fortress and its name. Thus Winchester owes its present name to its native chalk, for when the Romans marked out a fresh camp in the vale below the hill, they found, as so many explorers have done, that it was much easier to keep the old name than invent a new one, and on their lips Gwent naturally became Venta—Venta Belgarum. Then, when these had run their day, came the Saxons, who transformed it into Winte-cæster—the camp of Venta—Winchester.

It is a curious reflection that this quiet little cathedral town, nestled so snugly in its leafy valley, was within an ace, or two two's, or whatsoever most forcibly expresses 'all but,' becoming the capital of all England. It was the royal city of Wessex: here Alfred the Great held his Court; though of his palace of Wolvesey hardly any traces remain at this day, for it was dismantled in 1155 by Henry II., when he set himself to humble the pride and cripple the power of Henry de Blois, brother of King Stephen and Bishop of Winchester. But it was in Wolvesey that the 'Liber de Winton' was compiled by Alfred's order—the origin of Domesday Book, remaining the official statistical record till, as is said, it was destroyed as useless on being superseded by the Conqueror's more comprehensive survey.

Of Alfred's doings at Winchester the records are tolerably

ample, from the annals which he caused the monks of St. Swithun's to compile. Of these, the original manuscript, now in the Library of Corpus Christi College, Cambridge, was chained to a desk in Wolvesey Castle: tradition affirms that the great king himself used to write in it down to the year 891; and the book ever lay open, so that all men who could read might trace therein the annual register as it grew. This warrior king had a great reverence for letters, and the fame of Winchester as a seat of learning was heard afar. The Christian communities of Ireland had got a long start in literature over those in Britain; they were not slow to take notice of the favour shown to scholars by Alfred. The voyage across St. George's Channel was hazardous, by reason of the northern pirates who swarmed there; nevertheless, in 891 came three Scots—*i.e.* Irish—in a boat 'made of two skins and a half,' with provisions for a week, who, landing in Cornwall, made their way to Alfred's Court at Winchester. Their good Gaelic names stand in the chronicle to this day—Dubslane, Maccbetha, and Maelinnum.

Doubts have been thrown on the story of King Alfred and the burnt cakes, but it is as well authenticated as anything in his reign, and Asser, the king's intimate friend, is the chief authority for it. He adds (and both Florence of Worcester and William of Malmesbury confirm the strange story) that the swineherd Denulf, in whose house the incident happened, was remembered by the king after his restoration. Alfred having been struck by the fellow's intelligence, directed that he should be educated for the priesthood, and in the end appointed him Bishop of Winchester. But none of the deponents mention how it fared with Denulf's wife, the chief personage

in the burnt-cake episode. It is to be hoped she shared her husband's elevation—for the Church had not departed in those early days from the Pauline precept, that 'a bishop be the husband of one wife.'

Alfred was a puissant soldier as well as a scribe, and a good sailor to boot, as it behoved one who should hold Wessex against the amphibious Dane. His crowning victory over Guthorm or Godrun at Chippenham in 878 resulted in the treaty of Waedmor, which established him as King of Wessex, and of as much of Mercia as lay to the west of the Danelaw—namely, Norfolk, Suffolk, Cambridgeshire, Essex, Herts, and parts of the shires of Bedford and Huntingdon. And thus was the kingdom of England founded, with Winchester as the capital. In that city the Witenagemot continued to assemble; thence Alfred issued the Dómbóc, or code of Wessex law; and thither, in 897, were brought to him the prisoners captured from the fleet of the Danish usurper Hasting, to be hanged on the walls of Wolvesey Castle. In this union of Wessex and Mercia, London, the chief town of the latter realm, was too busy a seaport to be overlooked; but the real day of London did not dawn till long afterwards.

The bones of the founder of the English monarchy have been lost. They laid Alfred the Great in the Old Minster of St. Swithun, where the Cathedral now stands; but the monks vowed that his ghost walked and gave them no rest, so the remains were moved to the half-finished New Minster, which had been founded just behind the old one. As time went on, the proximity of these two minsters was found to be too great a strain on the Christian love of the brethren; so the monks of the newer foundation migrated in 1110 to a spot outside the city walls, where they built

Hyde Abbey and Monastery. Alfred's bones they carried with them, and laid in a new tomb; but it is our mournful part to record, with what patience God may grant us, that towards the close of last century the corporation of Winchester—Alfred's own city—being fired with the modern craze for improvement, caused the ruins of Hyde Abbey to be swept away, and used the material thereof for building a new jail. Worst of all, they suffered a wayfaring antiquary to carry off a certain stone of memory to Corby Castle in Cumberland, where it may still be seen, and the inscription thereon read—

ÆLFRED REX: DCCCLXXXI.[1]

Thus the ashes of the great king were scattered, as well as those of his doughty son Edward. But he still lives in his writings, and space may be found to quote one of the numerous interpolations he made in his translation of Boethius; for albeit it contains no more than a well-worn reflection on a trite subject, such as thoughtful men have ejaculated through all the ages, it throws some light on the intellectual degree of the first King of England:—

'True friends! I say that this is the most precious of all the riches of the world. They are not even to be reckoned among the goods of the world, but as divine ones; because false fortune can neither bring them nor take them away. Nature attracts and limes men together with inseparable love. But with the riches of this world, and by our present prosperity, men more often make an enemy than a friend.'

The kingdom founded by Alfred endured for a century and a half, and owed its destruction to one of the first acts in the long struggle for civil supremacy between

[1] This on the authority of Dean Kitchin [*Winchester*, 1893]; but the date does not tally with that of Alfred's death, which took place in 901.

Church and State. Winchester was then, as it remained for centuries afterwards, the richest see in England; so that in later years, when William of Edington was made to exchange it for the metropolitan dignity of Canterbury, he murmured with a sigh, 'Though Canterbury is the higher rack, Winchester is the richer manger.' Yet Dunstan, the leader of the monastic reformation of the tenth century, proudly refused to become Bishop of Winchester, having a far loftier ambition to serve when King Edred died. Edwy, his successor, was but a lad of sixteen when he ascended the throne, and Dunstan did not lose a day in asserting his authority over the new king. Edwy had made a love-match with his beautiful cousin Elgiva; but churchmen would not recognise the marriage, which was within the forbidden degrees. No terms are too harsh for the monkish chronicler Osberne to pour on the girl—*mulieris animum instigat Diabolus.* On the day of his coronation at Winchester, the poor young king, wearied with the long ceremony, refused to sit and drink all night with the nobles and clergy, and, thinking it high time to 'join the ladies,' withdrew to his wife's apartments in Wolvesey Castle. Now a king that would not get royally drunk at his own coronation was no king for the Saxons; the guests were furious at this affront to their *læta convivia.* Odo, Archbishop of Canterbury, was present, and ordered Dunstan and Bishop Cynesius to bring their monarch back to the board. These, hurrying off, burst into the room where Edwy was sitting with his queen and mother-in-law, his golden crown lying on the ground at Elgiva's feet. Dunstan delivered his summons, with which the king flatly refused to comply; whereupon Dunstan, who probably had drunk already quite as much

as he could conveniently carry, made a most offensive harangue to the ladies, seized hold on the king, rammed the crown on his head, and, assisted by Cynesius, forcibly carried him back into the banqueting-hall. Edwy had plenty of spirit; he chastised Dunstan for this outrage by stripping him of his abbotcy, and sent him into banishment. But he was not strong enough to fight the Church: all his kingdom north of the Thames slipped from his grasp, and the virulent Odo pronounced a divorce between him and his queen.

Ill-starred Elgiva! not content with thus ruining her fame, Odo caused her to be seized in her palace of Wolvesey, branded in her beautiful face, and banished to Ireland. Worse was in store for her. 'After a while,' as Osberne, with redundance of vituperation, ungallantly describes, 'her wounds being healed, but with the deformity of her shameless mind still gaping, she left Ireland and came to Gloucester, steeped in the obstinacy of a black heart.' *Homo homini lupus:* the vengeance of the Church which she had incurred was wreaked with devilish atrocity. Elgiva was seized *ab hominibus servis Dei*—by men in the service of God—acting, that is, under orders from Odo and Dunstan—and the sinews of her legs were severed, so that she might wander no more. Incredible as it might seem, were it not testified by the writings of Osberne, who was briefed by the clerical party, the young queen was actually hamstrung by these fiends. Of course, to palliate such severity, Elgiva is made to appear a dissolute, unworthy female; but the testimony of men who could carry out such abominations as their own annalist describes is not worth much against the character of their victim. She died under her torments; and Edwy himself

—*pro suis criminibus eliminato et misera morte damnato* —perished in a mysterious way, doubtless by assassination, near Gloucester, where he had gone to meet his beloved wife. It is a singular illustration of the prejudice which besets ecclesiastical historians in dealing with affairs involving the reputation of churchmen, that Dr. Milner, Vicar Apostolic of the Midland District, an able, and, in lay matters, an impartial chronicler, writing in 1798, described Elgiva as 'a wicked woman, of great beauty and high birth'; repeated (though he did not dare to translate) the abominable gossip about the scene in Elgiva's room, and vehemently vindicated the actions of Odo and St. Dunstan.[1] The whole passage is one of lamentable insincerity, suppressing Osberne's statement that the final punishment of the Queen was inflicted by 'men in the service of God,' and throwing the blame on the thanes 'then in arms against Edwy.'

Dunstan, after holding the sees of Worcester and London simultaneously, became Archbishop of Canterbury in 960, and died in 988, having seen five kings on the throne of England, and assisted in the removal of at least one of them. One of the most formidable and unscrupulous characters connected with the history of Winchester, he was, with all his dark faults, a courageous and powerful statesman—powerful because courageous. Had he lived a few years longer, he might have averted or deferred the ruin of the Anglo-Saxon monarchy; for it is certain he never would have allowed Æthelred the Unready to enter in 991 on the fatal policy of buying off Danish invasions, which ended in the surrender of sixteen counties in 1010.

One other picture of Anglo-Saxon Winchester may be

[1] *History of Winchester*, pp. 115, 116, and notes.

presented, showing the straits to which statecraft may be reduced under feeble rulers. Good Bishop Ælfeah, scandalised by the nightly orgies of his liege lord, and trembling for the disasters which such debauchery was bringing on his country, used to steal out of the palace of Wolvesey on winter nights, creep past the sentries, and, plunging into the icy Itchen, stand up to his middle singing penitential psalms till sunrise.

It availed not. The kingdom passed to lords of a sterner race, and Cnut, to whose name we were taught in youth to give the Latinised form of Canute, ruled the whole Danish dominions from the ancient Saxon capital. It is said that he returned thither after the famous wave-compelling experiment on the sea-shore, and, vowing never again to wear an earthly crown, hung it on the cross above the high altar in the cathedral, where it remained till the great cross itself, a marvel of silver work, disappeared in the convulsions of the Reformation. Cnut was a good friend to Winchester, 'having decorated,' says Roger of Wendover, 'the Old Minster with such munificence that the minds of strangers were confounded at the sight of the gold and silver and the splendour of the jewels.'

The coming of the Norman Conqueror found Winchester divided against itself, and the two minsters took opposite sides, with very important results on their subsequent fortunes. Queen Emma, having vindicated her character against the charges of immorality in general and complicity in the murder of her son Alfred in particular, by walking unscathed over nine red-hot ploughshares laid in a row on the pavement of the cathedral, died in 1052 in her own house at the top of the High

Street. She was the widow of two kings, Æthelred and Cnut, and the mother of two more, Harthacnut and Edward the Confessor. The benefactions of that clever woman to the Old Minster of St. Swithun had secured the goodwill of many of the clergy to her Norman kinsfolk; though Bishop Stigand, the friend of Earl Godwin, remained stoutly English. King Edward, too, though he hated his mother, and avoided Winchester as much as possible during her lifetime, had encouraged the Norman idea consistently, and had hospitably received Duke William, entertaining him in his chief castles. There was, besides, a strong feeling among the clerics of Winchester in favour of the race whose culture, as shown by their literature and architecture, was far ahead of anything hitherto attained in Anglo-Saxon England.

But the New Minster espoused the national cause against the foreigner. Under their stout abbot Ælfwig, uncle of the new King Harold, twelve monks and twenty men-at-arms, well armed, well drilled, and with suitable attendants, marched across the downs to join their king at Hastings. After the decisive battle there, when the victors came to strip the slain, they recognised the monks of the New Minster by their Benedictine dress under the mail—a circumstance by no means overlooked by William of Normandy when, amid the plaudits of the brethren of St. Swithun, he set up his Court at 'Guincestre.' Not only did he cause his new palace to be built within the precincts of the New Minster, but he deprived the monastery of 20,000 acres of good land.

The next act of the Conqueror, however, put a severe strain on the loyalty of his adherents in the capital. This was the order for a severe inquisition into the extent

and value of all lands within the kingdom, to be engrossed in the 'Rotulus Wintoniæ'—the Winchester Roll. 'So narrowly was it spied out,' whines the chronicler Ingulph, 'as it is shameful to say, though the king thought it no shame to do—that never a hide nor a rood of land escaped mention, nor ox, nor cow, nor swine; all was set down in writing and laid before him.' So odious and inconvenient was this proceeding to the commonalty, by reason of the facility it afforded for purposes of taxation, that the register was never referred to under its official title, but men nicknamed it the 'Domesday Book.'

Brave Stigand was deprived of his bishopric in 1072, and imprisoned in Winchester Castle, where he died. Walkelin, a relative of King William, was appointed in his place, and seven years later began to build a new cathedral—for the Normans despised the homely Romanesque of the Saxon architects. In 1086, the great structure being ready for the roof, the bishop besought his royal kinsman to supply him with timber from the forest of Hempage, which then flourished about three miles from Winchester on the Alresford road. The king gave him leave to take as many oaks as his carpenters could cut in four days; whereupon the wily bishop enlisted a whole army of carpenters, who, working day and night, hewed down every oak in the forest. Now King William set great store by his woods, and, riding that way not long after, exclaimed 'Am I bewitched? am I out of my senses? had I not once a most delectable wood here?' When he heard of the trick played on him by the bishop, straightway he fell into a great rage, such as it took all Walkelin's tact and courage to assuage. The original timbers of the oaks so craftily obtained without payment

still remain above the stone groining added to the roof at a later day.

In 1093 the new cathedral was finished, being the longest in England except St. Albans, and the relics of St. Swithun and a host of other saints were stored within it. William of Malmesbury describes how, in the year 1100, some countrymen were seen coming from the west, driving a frail cart towards the new church; and ever as they went blood dripped from it by the way, for it held the body of the slaughtered King of England. Him the monks huddled into the earth below Walkelin's great tower, with much shame and little sorrow, for William Rufus had died unshriven of his violence, profanity, and sensuality. The horror of him was so profound that nobody greatly marvelled when, seven years later, the tower fell in with a crash upon the tyrant's tomb. The beautiful gray tower—the same that gives Winchester at this day its crown of glory—was built immediately, with greatly strengthened piers of which the foundations are no longer endangered by the ashes of the Red King. The eye of one visiting the cathedral for the first time is sure to be attracted by a row of large painted chests, set on the top of the screen built round the presbytery in the sixteenth century. These contain the bones of many kings, queens, saints, and distinguished persons. In one of them repose in strange companionship the remains of Cnut and his Queen Emma, of William Rufus and the Bishops Wina and Alwin. So the inscription on one side of the chest informs us; on the other side is the explanation of such a curious arrangement—namely that 'sacrilegious barbarism' having mingled the dust of princes and prelates in the year 1642, all that could

be collected was put promiscuously into a common repository.

The hand of the Norman government had lain heavily from the first on the monks of the New Minster, because of the part they played at the battle of Hastings. Indeed, what between the millers in the Soke and the king's engineers making moats for the castle, the ecclesiastics had been nearly drowned out of their quarters, and, as mentioned above, they sought out a fresh site for their monastery in 1110. William Giffard was then bishop, and, as behoved any one who held that office in the royal capital, was a discreet courtier. But the necessities of Henry I. were frequent and exorbitant: to keep pace with his exactions, Bishop William had to tax his episcopal tenants so sorely that at last even the docile monks of the Old Minster rebelled. For years they continued on the worst of terms with their spiritual head; but in 1124, the king having exerted himself to bring it about, a reconciliation was effected in a scene worthy of the brush of the late Mr. Calderon. The bishops sat enthroned in the chapter-house; two by two the monks, stripped to the waist as if for scourging, filed before him and besought his forgiveness.

Bishop Giffard came to find his Court duties irksome with increasing years, so he turned monk in 1128, and was succeeded in the see by Henry of Blois, brother of Stephen of Boulogne, who was afterwards King of England. An astute, worldly prelate, he headed the party of Stephen against that of Empress Maud, and in the civil war which ensued most of Winchester, including twenty-two churches, was reduced to ashes. The luckless monks of the New Minster, having again

espoused the losing side, had their new monastery of Hyde burnt about their ears, and their great cross, the gift of Cnut, was melted to a shapeless alloy of gold and silver. But Henry of Blois befriended the Old Minster. A great collector of works of art, he laid up vast treasure in the cathedral, and richly enshrined there the relics of many saints. But all these are scattered now, save the great font of black stone, carved with figures illustrating the miracles of St. Nicholas, still to be seen in the nave, and a gold ring set with a sapphire, found when Henry's tomb was opened not many years ago. A nobler and more enduring monument he founded—the Hospital of St. Cross—over the meadows to the south of the town, where to this day the brethren refuse to no wayfarer a dole of bread and a draught of ale.

With the death of Henry I. in 1135 the sun of Winchester turned towards its setting. Hitherto the ancient city had remained the practical capital of the realm, the favourite abode of the Court, the repository of the public records, the chief seat of justice and learning. Also it could boast of the chief State prison, and no less than eight *carnifices* or executioners—a large percentage in a town of some 10,000 or 12,000 inhabitants. Yet these officials never enjoyed a sinecure: and the bishop had his separate prison also, with its appropriate staff. In spite of this there came a time when no free Wintonian could be found to do a certain act of bloody injustice. Winchester was ever faithful to her kings, no matter how bad they might be; so it came to pass that her citizens warmly supported the cause of Edward II., even through the evil days of his imprisonment and death; wherefore,

Queen Isabella and Mortimer resolved to strike terror into their hearts. Edmund of Woodstock, Earl of Kent, the king's own uncle, lay a prisoner in Winchester Castle: him they condemned to death. Early one morning he was led upon the scaffold outside his prison, but not one of the eight executioners could be induced to raise a hand against a person so deeply beloved. All day the earl stood there waiting till some one should release him from his misery, till at last, in the evening (*ad horam vespertinam*), they found a wretch in the Marshalsea who, to save his own neck, struck off the head of the condemned man.

But this is anticipating. In the meanwhile Winchester, though still a royal residence, fell steadily behind in the struggle for supremacy with the Mercian capital. In importance, she had to own herself surpassed by London, but in precedence of dignity, not just yet. As late as 1269 her citizens vindicated their rights, though in rather ambiguous fashion. Henry III. was to wear his crown at a State banquet in Westminster; the men of Winchester claimed their ancient office as cupbearers, which the men of London disputed. The easy-going king, to avoid worry, decided to dispense with the ceremony of cupbearing altogether, on which the Londoners withdrew in dudgeon, leaving the Wintonians to enjoy their dinner.

But that was the last spark. A few years later and the position to which Winchester had receded was accentuated by an ignoble squabble for the second place. When David, the brother of Llewellyn of Wales, was executed at Shrewsbury in 1283, his head and quarters were assigned for exposure in the principal towns of the

realm. To London, as matter of course, went the head, but the portion of next highest honour was the right upper quarter. For this there was sharp competition between Winchester and York. Edward I. decided the question in favour of the southern town, whither accordingly the grisly token was conveyed.

It was hard on the old city to yield her pre-eminence, even though her double allegiance to Crown and Mitre had sometimes brought the burgesses into dilemma. For example, in 1243, when Henry III. was quarrelling with Bishop Raley, he ordered the mayor to shut the town gates in his face. The mayor obeyed, and afterwards was heavily fined by the angry prelate for resistance to his spiritual lord. Yet Winchester, though reft of its glory as the metropolis, long continued the favourite residence of the Court. The greatest of the Plantagenets set out thence on his crusade in 1270, and revisited it immediately on his return in 1276, and was constantly there until the year before his death. In February of that year, 1306, he was hunting at Itchen Stoke, a few miles up the river. His mind was well at ease, for the dream of his ambition—the unification of Great Britain under one crown—had been satisfactorily accomplished. John Balliol was giving no trouble; Wallace had been disposed of the previous summer; Edward himself had just held a council in Westminster and assigned their posts to the various Scottish magnates, including Robert de Brus, all duly and doubly sworn to fealty; the old king was well entitled to take his pleasure in the chase. But messengers brought startling news to him at Itchen Stoke. Robert de Brus had slain John Comyn in the church of Dumfries, and Scotland was arming. From that moment

Edward never knew another hour of tranquillity, nor ever did he see his beloved Hampshire valley again.

In the thirteenth century pilgrims flocked in such hordes to St. Swithun's shrine that Bishop Lucy, to protect the regular worshippers in the cathedral from annoyance, and even contagion, from the malodorous throng, enlarged the church by an addition, with a separate entrance from the north transept, and closed on the south side by the fine gates of wrought iron, supposed to be the oldest specimens of that craft in England. Against William de Wykeham, the greatest of Winchester's prelates, who shall breathe a word of disparagement? Had he done no more than found and endow St. Mary's College of Winchester, he had earned the blessing of us all, for on that model have been moulded all our other great public schools. William surely has proved not the least among the prophets, else what inspired him to choose the simple motto—Manners makyth Man—as if he had foreseen how the gentle ordeal of the public school was to supply the hall-mark of courtliness, even in days when rapid money-making raises of a sudden many above their birth level. Yet is one sorely tempted to irritation because of the disastrous activity of this excellent man. Would that in his ardour for designing new buildings he had been content to leave the old ones alone! Then had Winchester Cathedral remained in the south what Kirkwall is in the far north—a magnificent and perfect example of Norman architecture at its best. But William of Wykeham had begun his career as Chief Commissioner of Works to Edward III., and, being an ambitious ædile, must needs cut and slash at the Old Minster, obliterating Walkelin's noble triforium, and ripping out the round-headed clere-

story windows to make way for broad, shallow lights in the modish Perpendicular style. It is true that Bishop Edington had begun the mischief; for he had pulled down the massive west front, and left ample funds, which he directed his successor to apply to 'perfecting the nave.' But the heartless transformation is indelibly associated with the name of Wykeham, and it is ours to deplore the thoroughness with which he carried it out. Luckily the transepts remain undeformed, with their fine ashlar-work and massive piers, although those supporting the central tower have been cut away to an alarming extent.

It is cold comfort to read Dr. Kitchin's opinion that 'the result is that the nave is the finest, and perhaps the most simple, specimen of Perpendicular work extant.'[1] Of all the phases through which Gothic building passed in its decline the Perpendicular is the most monotonous, and, so Mr. Ruskin has declared, the most vicious. It is unknown except in England, or as copied from England; for Scottish architects, save in the instance of Melrose, followed the Dutch Flamboyant model. The effect of these great stone gratings thrust in the place of the grave, round-headed Norman arches, must have been excruciating when they were new and glaring white. Now we suffer them gladly, in their silvery, time-worn tones, and even Edington's paltry west front, viewed down the paved avenue of lofty limes, looms solemn and grand. But still we repine at the craze for novelty which altered the older and nobler design.

Sadly as the Old Minster was marred by Wykeham, it was to suffer far worse things under Bishop Horne in the sixteenth century. Not that he meddled with the architecture: he was not going to spend more than would keep

[1] *Winchester.* By G. W. Kitchin, D.D.

the fabric weather-tight; indeed to avoid the expense of repairs he barbarously pulled down the fine Norman cloister and chapter-house. But the day of doom had come for images and relics and all pleasant pictures. What was not of costly material was burnt, and what was precious (and there was very much of that) was turned to money. Even the great silvern cross over the high altar, perhaps with Cnut's crown still on it, was torn down, and to this day you may see the space it once covered, bare and cold amid the rich tracery and carving of the reredos.

Probably upon no town in the realm was a greater outward change effected by the suppression of the monasteries in 1547 than upon Winchester, because no other town could show such a large proportion of ecclesiastics in her population. The Priory of St. Swithun, perhaps the most ancient in England, the Abbey of Hyde, the houses of the Grey Friars and Black Friars within the walls, and those of the White Friars and Augustinians outside them in the Soke, all were swept away, together with St. Mary's Abbey of Benedictine nuns. And the spoliation went on briskly after Henry VIII. had gone to rest, for Winchester was still far the richest see in England. Innumerable mortuary chapels in the cathedral and other churches in the town[1] were disendowed, and their revenues either appropriated to the Crown or bestowed on laymen. But Winchester was loyal first and Catholic afterwards; she remained faithful to the hand that smote her so sorely, and her people thought that their reward had come when in their cathedral Queen Mary was wedded, with splendid pageant, to Philip of Spain. The days of Wintonian glory surely would return with the old religion. They even went so

[1] Dr. Milner enumerates ninety-two churches and separate chapels existing in Winchester and its suburbs in the fourteenth century.

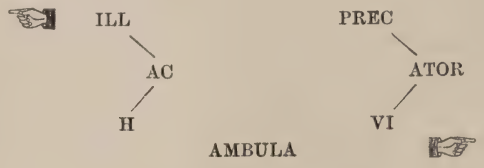
far as to burn a single poor heretic, one Bembridge, as became the citizens of a courtly town, just to show Philip that he had not come to a barbarous, unfashionable land. But the restoration went no further, and the only relic remaining of Queen Mary's sombre presence is the carved chair in which she sat at her wedding, still preserved in the Lady Chapel.

Crafty, silly King Jamie proved too much for the Wintonian conception of royalty. Feeling nervous about the plague in London, James had moved his Court to Winchester in 1603, and the eleven prisoners implicated in the 'Main' and 'Bye' conspiracies were brought hither for trial. They were condemned to die—among them the gentle Raleigh—and one by one they were led out for execution in front of Winchester Castle. Brooke, as head of the 'Bye' plot, actually was decapitated; then on the following days came the Lords Cobham and Grey, Sir Griffin Markham and Sir Walter Raleigh. The king had arranged a scandalous farce. He hoped to extract confession from them under fear of death, and as each one was about to lay his head on the scaffold, the groom of the bedchamber stopped the proceeding in name of the king. Raleigh's poem, the 'Pilgrimage,' was written at Winchester on this occasion, when he was preparing for what he believed to be certain death. It is as remarkable for the beauty of the first stanza as for the mediocrity of the other two :—

'Give me my scallop-shell of quiet,
My staff of faith to walk upon,
My scrip of joy, immortal diet,
My bottle of salvation.
My gown of glory (hope's true gage !)
And thus I 'll take my pilgrimage.'

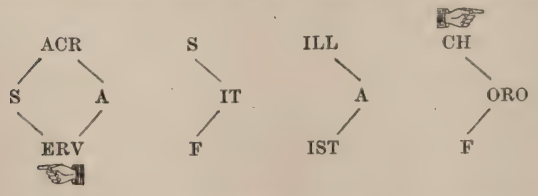
The shabby transparency of the stratagem was a rude shock to the reverence of Winchester towards royalty, nor had she in later years much opportunity of reviving it.

In 1632 Bishop Curle resolved to put a stop to the custom which had established a thoroughfare through the cathedral between the northern and southern parts of the town. But he did so in a dignified and scholarly fashion, not without some antique pedantry. Instead of putting up a rude notice, 'No thoroughfare: trespassers will be prosecuted,' he caused the huge buttress on the south side of the church to be perforated by a footway giving access through the close from one part of the town to the other, and two curious Latin inscriptions to be carved near its entrance. And, as if Latin should not be puzzling enough to the townspeople, he cast the inscriptions in the form of anagrams, thus:—



—that is, 'Worshipper, walk this way; traveller, that': and again—

CESSIT COMMUNI PROPRIUM: JAM PERGITE QUA FAS



—that is, 'Public right ceases: now go the proper way:

let this way be consecrated to the choir; let that one lead to the market.'

In 1644, when King Charles's cause in the south was broken at the battle of Cheriton, near Alresford, Waller drove the fugitives right up to the walls of Winchester. Six months later Oliver Cromwell battered the town and took it, and his troopers wrought irreparable havoc among the archives and other manuscripts in the cathedral library. Four years later, in 1648, the city magnates assembled to receive their king, when, on his melancholy journey from Hurst Castle to Windsor, he arrived, as a prisoner, to spend the night in the old town. The neighbouring squires, too, rode in from the country, and the people assembled in crowds, but the officer commanding the escort sternly repressed the warm expressions of loyal welcome they were burning to make.

The sun shone on Winchester once more at the Restoration, and its forfeited bishopric was restored to it, for Charles II. was often there, and his sinister brother, the Duke of York, to boot. Livelier company, too, he brought with him, and such as vastly helped to revive the local trade. Men still show the spot in the garden behind the canons' house where unflinching Prebendary Ken spoke his mind about Nell Gwynne. Charles well loved the quiet town, with its gray buildings and green alleys, so fitting for flirtation, and gave command to Sir Christopher Wren to build him a fine palace, after the fashion of Versailles. But he never lived to see it finished, the works were stopped at his death in 1685, and there stands to this day the 'King's House'—monument of the last act of royal favour to Winchester.

Two years before the king's death, in December 1683,

there passed away in Dr. Hawkins's house at Winchester the gentle spirit of one who has done far more than many writers of loftier pretensions to throw a charm over the scenes he knew and loved so well. Izaak Walton, Royalist in sympathy, had yet managed to wend a peaceful course through the manifold troubles he had witnessed, and dying, as he wrote in his will, 'in the neintyeth year of my age, and in perfect memory, for which praised be God,' was laid to rest in the cathedral, where his grave is not the least revered among the company of kings and spiritual rulers housed in that ancient fane.

With Charles II. and Izaak Walton let me bring this rambling survey of the story of Winchester to a close. It were impossible within reasonable limits to do more than touch here and there a salient point in it, to call over more than a handful of the great names which crowd the record, to mention more than a few of the buildings which have resisted time and fire and—most destructive of all—improvement. In this last respect Winchester may not have suffered more in proportion than other ancient towns, but then she had infinitely more to lose than most others. Of her two castles and ninety-two churches, her bishop's palace, her walls and gates, how comparatively little is left to us! The municipality has been as conspicuously active of late times as they were negligent in the years when their streets afforded a favourite playground for pestilence; when 'dyvers Stretes and Lanes of the sayd cyty, by castynge of donge, duste, and other filthy thynges, are very filthy and noyfull to all such as shall passe by the same.' The black death in the fourteenth century and the plague in 1666 raged with appalling malignity, as is testified to this day by sundry green mounds over the

grave-pits on the downs. Indubitably there were heavy arrears in the matter of sanitation, and the town council set about wiping them off with a will. But also they wiped away a great deal that would be reckoned priceless now. Besides the wreck of Hyde Abbey above mentioned, and the loss of King Alfred's gravestone, we have to lament the destruction in 1778 of the Hospital of St. Mary Magdalene on Morne Hill, because vagrants used to harbour there. Then the ruins of Norman Wolvesey, where Saxon landowners used to deliver their annual tale of wolves' heads, were broken up for road-metal, and these hard-hearted reformers spared not even the city gate towers, whereof three out of five were demolished between 1789 and 1791. By good luck two of them escaped—the Westgate, dating from 1266, at the instance of some citizens whose houses had been built against it; and Kingsgate, because it bears over its archway the little church of St. Swithun. One other monument was in even greater peril—the Butter Cross, namely—a fine example of fifteenth-century work, and a conspicuous ornament of the High Street, adorned with a small statue of St. Laurence. This had actually been sold by the commissioners; but popular feeling was in arms against the removal of such a familiar landmark, and the bargain was cancelled. It is difficult to understand the callousness which prevailed a hundred years ago in respect of the preservation of historic monuments, and to reflect without impatience on the vast number that were needlessly swept away.

Still, heavily as Winchester has been plundered, sorely as war has wasted her buildings, and not less sorely the acts of ambitious prelates and energetic councilmen, much

—very much—remains. English holiday-makers, trooping off to Continental towns, find no slum too foul to be ransacked in search of architectural remains. That is very well; but it is also well to bear in mind that there is a great deal to explore at home. Winchester perhaps is less changed internally and in her surroundings from the city that used to be the 'morning gift' of the kings of England to their brides, than any other English town in a similar time. No manufactures have sprung up to sully her bright air or soil her brighter stream; even the South-Western Railway approaches her reverently under screen of deep cuttings in the chalk, and passes, scarcely seen, outside her ancient walls.

Standing in the old Roman roadway at the Westgate, and looking down the High Street across the Soke to St. Giles's Hill, one sees few things, except the dress of the citizens, that would have startled the understanding of Philip of Spain's grandees, or Sir William Waller's Ironsides. Some of the shops have sported plate-glass, and nearly all the roofs, alas! are covered with Welsh slate, that provokingly cheap and excellent material which is swiftly ruining so many landscapes by superseding red tiles; but besides these novel features, the old town basks in the summer haze with much the same aspect of leisurely occupation and decorous quiet as it must have worn, but for exceptional episodes, for centuries. The eight executioners provide no spectacle now, so people stroll up to the station to watch the passengers in the London train; the bishop's proclamations are no longer of pressing moment, but there are the evening papers to con over and discuss; and the old military feeling is kept astir, as befits a city built on the lines of a former Roman camp, by the

blare of bugles from the barracks, and the measured tramp of troops passing to the drill-ground.

It has been shown how nearly the old capital of Wessex became that of all England, and how it certainly would have continued the capital if the Anglo-Saxon monarchy had endured. Professor Skeat has indulged in some curious speculations as to one result, at least, which certainly would have followed had Winchester not yielded the first place to London.[1] 'English as she is spoke' would have been but a dialect, and the literary language imposed by the capital would have been the speech of Wessex, instead of, as now, that of Mercia with a dash of Northumbrian. John of Trevisa, who wrote good Southern English in 1387, had a poor opinion of Mercian and Northern English.

'Also Englishmen,' runs one passage, rendered into modern English, 'though they had from the beginning three manners of speech, Southern, Northern, and Middle speech (in the middle of the land), as they came of three manners of people of Germany —none the less, by commixture, first with Danes and afterward with Normans, in many of them the country language is impaired; and some use strange babbling, chattering, growling, snarling, and gnashing of teeth. . . . All the language of the Northumbrians, and especially at York, is so sharp, slitting, grating, and unshapen, that we Southerners can scarcely understand that language. I believe it is because they are nigh to strangers and aliens that speak strangely, and also because the kings of England always dwell far from that country. For they turn rather towards the south country; and if they go northwards, go with a great army. The reasons why they live more in the south than the north may be, that there is better cornland there, and more people; also nobler cities and more profitable havens.'

[1] *Principles of English Etymology*, 1887, p. 29 *et seq.*

One effect on our language, had the capital of England been fixed on the southern instead of the northern side of the Thames, would have been that we should have had a much more elaborate system of grammatical inflexions than at present, and instead of boasting of ourselves as 'fine fellows who dwell in their island,' we should have said 'vine vellows that woneth in her iland.' Chaucer, as a Londoner, had much to do with establishing the Midland or Mercian dialect as literary English; but even his influence has not expunged all the Southern forms: thus, though we say 'fox' instead of 'vox,' the female fox is still known as 'vixen,' not 'fixen.'

Would you view Winchester aright? go visit it in May or early June. It is a fair city at all seasons, and the wells of Itchen keep its valley green and fresh right through the hottest summer. But it is in the early season, before the uplands are parched, or the wealth of blossom faded from wayside hedge and meadow, that it is fairest. If you bicycle, it is well; the roads generally are admirable, though those who keep them delight in spreading an excruciating coating of sharp flints over the ways across the downs, such as no tyre yet devised by man can resist. Almost better to hie to one of those excellent hostelries the 'Royal' or the 'George' (Winchester has never been without its 'George' tavern for five hundred years) and hire a hack; for if the down roads are harsh, the turf beside them is free and velvety. Rise early, when the birds are singing in the cathedral gardens and the swifts are wheeling in endless circles round the gray towers, and ride out, before the dew is off, along the Alresford road, between masses of lilac and laburnum tossed over the wayside walls, past Headbourne Worthy, King's Worthy,

Martyr's Worthy, Easton, Itchen Abbas, and so to Stoke Charity and Bishop's Sutton. Each of these little villages has its interesting church: St. Martin's of Headbourne Worthy contains some rude work of Edward the Confessor's reign; Martyr's Worthy and Easton have some good Norman details, and so had Itchen Abbas till the hand of the restorer overtook it.

And ever, as you ride, the sweet river will approach and retire from the roadside, reminding you, if you are an angler, that of all the trout that do swim in English waters, those of Itchen are the most difficult to catch and among the fairest when caught. But you can postpone consideration of these till your return to the old shop behind the Butter Cross, where Gossip Holland will display such delicate duns, such cunning quills, such irresistible iron-blues as may hardly be matched by other tyers, tie they never so wisely, and discuss with you the season and sky most suitable for each. And while you are in the saddle let your thoughts wander through the long story of the past, for the name of each hamlet in your way may be found far back in the chronicle of the making of England.

XX

Ceanothus

The prevailing 'chapparal' or scrub on the Pacific coast of North America is chiefly composed of several species of *Ceanothus*, a shrub all too sparingly cultivated in our gardens. Most of the genus suffer from winter cold in our midland districts, but they are quite at home under the mild influence of the western seaboard. They are nearly all autumn flowerers; but one kind, *Ceanothus rigidus*, comes to perfection before mid-

summer. A fine specimen formed the chief ornament of Whitchurch in Hampshire when I passed through that sequestered village ten days ago (1902). It covers half the front of a house, from the ground to the eaves, with a beautiful mantle of deep blue.

XXI

The Food of the Dipper

The food of the dipper or water-ousel has been a frequent subject of controversy. Anglers suspect this lively bird of a partiality for trout and salmon spawn. Professor Newton, if I remember aright, repels the accusation. Lately (1902) I was a witness of the dipper's expertness in catching fish. I was trying, with notably ill success, to inveigle a salmon out of a certain pool. On the opposite bank a hill burn flows into the river, rippling over gravelly shallows, a favourite gathering-ground for minnows. My friend the dipper was just as busy fishing as I was, and with better luck. He dashed repeatedly through the shoal, using his wings as fins (this power, also, has been called in question), now under water, now on the surface. At last, after many failures, he caught a minnow, went ashore with it, and having, I suppose, pinched the wriggle out of the wretch, winged his flight to a cascade high in the oak copse on the hill, where, no doubt, a little hungry circle of Masters and Misses Dippers were awaiting their fish course.

XXII

Midsummer Weeds

One need not be a disappointed angler to murmur against some of the normal phenomena of summer in a country so thoroughly drained as ours. The ground gapes; pastures exchange their verdure

for khaki-tinted tinder; delicate wild-flowers, such as stitchwort and speedwell, vanish before the great heat; more robust ones, like foxgloves and wild roses, rush at tantalising speed through their period of bloom, hastening to pack their seeds safely into non-conducting capsules or juicy berries before the sap supply shall fail. That reproduction and perpetuation of the species is the almost whole concern of that nebulous impersonality which we term Nature must be the conviction of every dispassionate observer. Our prerogative as Lords of Creation has never been seriously challenged; but the cold light of science has dispelled long ago the pleasing illusion that flowers were gifted with beauty and incense for the gratification of human senses. Let us give ourselves what airs we will, Nature bestows a blush upon the rose and fragrance upon the meadow-sweet to attract flying and creeping things, that so profitable fertilisation may be ensured.

In southern England the prime of floral display is past before midsummer-day, but it is different in the 'caller' west and north. This year (1902) the drought—the shortage of rain, at least—has been greater in Scotland than south of the Trent; the state of the rivers is a heartache to all honest fishers; yet it is well worth filching a holiday from what, in defiance of all Nature's coaxing, we choose to make the busy season, were it only to revel for a couple of summer evenings in the wealth of wild-flowers which the later tourist never sees and may not imagine. As I jot these notes I am resting on a dusty wayside skirting the southern uplands. My bike and I repose on a bank of tall grasses and bright green bracken, splashed with blue and yellow vetches and red sorrel. In another month, when southerners shall come this way in scores, the vetches

will be gone, the grasses will be ripe and withered, and the bracken will be dark and dull. True, on the moorland behind the heather will be in bloom, but it cannot match the crimson of the bell heath which now mantles the rocky knowes, nor the perfume of that exquisite little upland orchis, *Habenaria conopsea*, whereof there is now such abundance on the dry ground, while its pale and statelier cousin, the butterfly orchis, abounds in the lush hollows.

Along the side of this road runs a truly brilliant selvage —a filagree of golden lady's bedstraw, favourite food for the caterpillars of many of our choicest butterflies; showers of Scottish bluebells, which you English are never done disputing whether they should be written harebells or hairbells; lobes of crimson clover and brassy bezants of hawkweed; drifts of white galium and yellow birdsfoot trefoil: behind them all, along a gray stone wall, crowned with creamy honeysuckle, spires of foxglove singly and in groups. All, or nearly all, this illumination will be extinguished before the hunter's moon rises.

Beyond the wall the ground falls sharply through an oaken coppice, sprinkled with dainty cow-wheat, to a meadow; but into that meadow and to the lily-margined river beyond I must not stray, else should I babble of flowering weeds over half a dozen pages. Only one plant let me mention out of the myriads in that moister ground, for it is a quaint one, uncommon withal, and a singular instance of adaptation to unpromising conditions. Most of the large family of St. John's wort are fastidious about drainage, loving dry knolls and banks; but this poor relation, *Hypericum elodes*, puts up with bogs that will sustain little except the buckbean. The beautiful

buckbean has now gone, fading with the last days of spring, and in its room this lowly St. John's wort has spread its prostrate tresses of glaucous green studded with modest yellow flowers. Truly it is a wonder that it maintains the struggle for life among such a crowd of stronger herbs, for its blossoms can attract few insect visitants where such abundance of choice is spread. It is content to grow in slime that finer growths disdain; therefore, so long as there are a few acres of bog left in the land, *Hypericum elodes* may gladden these uncoveted places.

XXIII

A stray Fledgling

One sees some unexpected things at times, sitting quietly by oneself. As I am musing upon the beauty of these wayside weeds, a tiny little creature runs out of the herbage into the road, a dark brown fluffy ball on the white dust in the strong sunshine. A biped, I perceive, and therefore a bird, but for the life of me I cannot name it. It moves leisurely, and seems quite at ease; it requires but moderate stealth to secure it, and lo! it is a young snipe. Why thus alone, and why in the middle of a dusty high-road, deponent sayeth not. Released from a considerate hand, the little baggage bundles off and conceals itself in the tall grass.

XXIV

An intrepid Kingfisher

A friend has furnished me with a pretty illustration on the theme of 'All's well that ends well' from the Lambourne. That limpid stream is the haunt of many kingfishers, source of much joy to unfeathered bipeds on its banks. Among them dwells a

lady who tries to reconcile affection for the race of Gray-malkin with sedulous care for birds. Hard it is to keep the interests of her favourites from clashing. At the foot of this lady's lawn runs the Lambourne, its nearer bank bound by a rough stone scarp, wherein last spring a pair of kingfishers built their nest of the customary unsavoury materials, laid their lovely alabaster eggs, and hatched a thriving brood of princelets. It were difficult to say which took the greater interest in the flittings to and fro of the parent birds, the lady or her cat. Sitting one day at her writing-table the former saw the latter (*pace* Dr. Johnson!) pass the window with something blue in its mouth. 'A kingfisher!' flashed the first thought, for there is no tint in British wild nature to rival that of 'the sea-blue bird of March.' 'Rescue!' was the word; but the lady reached the front door only in time to see the cat half way up a magnolia trained against the house, whence the creature made its way into the open window of a chamber where her kittens were harboured. To reach the room took the rescue party but a minute or two; it arrived in time to witness a spirited little drama. The cat had laid her quarry unharmed before four pairs of round admiring eyes, evidently intending to show her off-springs how living game was to be dealt with. But beneath the tawny vest of Halcyon there beats a stout heart; life and liberty were dear to the brave bird, which was standing at bay, armed with a single weapon against the captor's teeth and claws—a beak, to wit, in proportion to its diminutive stature as a two-handed sword to a fifteenth-century man-at-arms. Whether the cat was really perplexed and frightened by the little tartar she had caught, or whether she was merely posing before her kittens,

certainly she seemed inclined to avoid the encounter. The kingfisher was rescued, and set at liberty once more in its paradise of tinkling shallows and bending willows.

XXV

Cats

Cats are all very well in a town, for those who like them, whereof I am not one. You may lavish unstinted affection upon your cat, pamper it with cream, and fish, and what not, besides wasting good time in conferring infinite delight upon the brute by stroking its back, but you will get no frank requital of love such as is won so easily from a dog. Dr. Louis Robinson has explained the reason why. Cats and their kind, lions and tigers, are solitary hunters; they neither give nor brook co-operation; they have their lairs and haunts, but they seek no society, and value human patrons only as purveyors of delicacies or as amateur *masseurs*. It is far otherwise with dogs and their congeners, the wolves. The whole canine scheme is social; a dog alone is a dog at a loss. Who ever saw a cat in distress for the absence of her mistress? but there are few more wistful countenances than that of a dog who has missed his master in the streets. A solitary dog is helpless: it is only sad dogs, bad dogs, dogs untrue to their nature, that go a-hunting without company. Honest dogs are only happy in concert with the rest of the pack, or with a human companion. Set a dog to scrape at a rabbit-burrow, and he will work as if his life depended upon it. But he expects you to do your share, giving you explicit instructions, all but articulate, how you are to watch the bolt hole, while he works the front door. Whether he

gets his rabbit or not, he is perfectly happy in fulfilling his office as partner. To a cat the very notion of a partnership is distasteful. Go to one, as I did this morning, watching a mousehole in the hayfield, and offer assistance; all the thanks you will get is a peevish glare, expressing, as plain as any words could put it, 'I wish to Heaven you would mind your own business and let me attend to mine!'

When I say that cats are only tolerable in a town, I mean that they cannot indulge their evil propensities there as they do in the country. Hear me while I reveal how evil those propensities are. There is a pretty silver-gray cat with nice black mittens and four half-grown kittens in this hill farmhouse, where I have been waiting a week for the long-wished-for spate that is to set us a-fishing. I began with the gentlest intentions towards that cat. I purloined dainties from the breakfast-table for her; I sat in the sun stroking her back for a quarter of an hour at a time. I told her how much I regretted that meteorological conditions were unfavourable to my providing her with fish. She purred so softly that I was almost beguiled into the belief that I had her sympathy, whereas all the time I might have known that all she said was 'Go on; that's rather jolly. A little quicker—quicker, d'ye hear? Now my ears—that's it. Now you may do my back again.'

A little further acquaintance has made me understand better the nature of this domestic tiger. Every day she brings something to the grass plot before the house and instructs her offspring how to tear it to pieces. One day it is a mouse, which she brings alive, and tortures for ten minutes or a quarter of an hour. When the tiny frame

has almost yielded up the ghost from mingled fatigue and terror, she stings it into convulsive runs with her sharp claws. Again it is a thrush or a lark, and one morning last week she roused my ire by weighing in with a full-grown snipe. Those who keep cats in the country to keep down mice in the house should reflect what an infinite amount of various iniquity they perpetrate out of doors. Yesterday a neighbour (as we count neighbours in the hill country—this one lives fourteen miles away) told me that the only hawfinch he ever saw in Galloway was brought in by the minister's cat.

July

XXVI

Summer-tide in a Highland Forest

Not so vehement nor so persistent as of yore has been of late the declamation of philanthropists, political economists, and demagogues against the crying crime of deer-forests. The crofters would indeed be hard to please if they had derived no measure of content from the redress, by successive Commissions, of their grievances, and the settlement whereby each of them has been created the dominant partner in his holding. At no time were the informed and thoughtful classes in Scotland—the lawyers, traders, and farmers—induced to join the agitation against the exercise of a privilege supposed, or at least alleged, to be implied in clearing ground for deer. So far as they gave any ear to the denunciations which, a few years ago, were hurled from hundreds of platforms, they were perfectly well aware that no 'clearances' whatever had taken place in the interests of mere sport: whatever had been done took place many, many years ago in the sacred cause of money-getting, when it was found that sheep would pay better than grazing let to crofters for their black cattle. Many pathetic scenes might have been witnessed during the first half of the last century: the memory of wholesale eviction and deportation lingers still among the descen-

dants of the clansmen in many a glen and beside many a loch. Deeds were done then on behalf of proprietors who thought it no crime to turn their lands to the best account —nay, whose action helped to raise Scottish agriculture to its present honourable eminence—which the public conscience would not tolerate now. Such deeds it is no concern or purpose of mine to justify at this day: all that I wish to bring to mind is that they were not, as has been too commonly believed, wrought with the slightest reference to field-sports. The forests described sixty years ago in William Scrope's glowing pages did not extend to half the area now to be reckoned as deer ground, neither did they equal in extent the ancient royal and baronial forests which had been reserved as chase from time immemorial. Much of this ancient forest had been given over to sheep before Scrope's day; the Black Mount itself, which his pen rendered perhaps the most famous of all, is shown by the venerable Black Book of Taymouth to have been reserved for deer from very early times, was put under sheep when that wonderful source of profit was first tapped, and was not cleared again for deer till 1820.

The recent increase, therefore, in the extent of deer ground is directly owing to the failure of sheep-farming as a profitable industry in the Highlands. Large sheep-farms are usually let on terms peculiarly hazardous to the proprietor's pocket in the event of unprosperous times. He is held bound to purchase at valuation the entire stock of his tenant at the close of the lease. When sheep-farming is profitable, of course the tenant is willing to renew, or another tenant is easily found; but when the industry ceases to pay, the land is thrown on the owner's hands;

he has to pay several thousands in cash for stock which has ceased to be saleable at a profit, and he has to decide between carrying on the farm himself at a loss, or turning the land to other account. Then it is that the sporting value of ground suitable for deer comes into prominence. I have listened to honourable gentlemen in the House of Commons (some of them, I am certain, with their tongues in their cheeks) holding up Highland proprietors to obloquy, because, instead of persevering in losing money by attempting to grow mutton for the million, they had adopted the more business-like course of letting their mountains as playgrounds for millionaires.

Of all the instances of misdirected energy by a good man, there never was a clearer instance than Professor Bryce's Access to Mountains Bill. Of all the countries on the face of God's earth there was less occasion in Scotland for such a law than in almost any other, because in no other civilised country is there so little defence against trespass. People in that land may go where they please out of doors with impunity, provided they do not inflict damage, and the only defence a landowner has is his power of obtaining interdict. Why then object to Professor Bryce's bill, if it only enables people to do what they have a right to do without it? Nay, but the boot is on the other leg: the right is not with the intruder, but with the owner, if he chooses to exert it. It is rarely exercised; but it is becoming valuable in proportion as the most solitary districts are being opened up by railways. An excursion agent may, under the existing law, be interdicted from dumping down a horde of exuberant trippers in the heart, say, of Glenartney or Braemar forest; but pass Professor Bryce's bill, and the

protection against such an infringement of private right disappears.

Not only has the Scottish law of trespass always been more indulgent than that in other countries, but the ancient forest laws were singularly mild in contrast to the ferocious statutes of the Norman kings of England. There is a statute of William the Conqueror (it exists in manuscript, I believe, at Savernake) under which any man taken in the king's forest is condemned to choose between three penalties—to have his eyes put out, to be emasculated, or to be put to death. Compared with this, the Scottish statute of William the Lion (1165-1214) reads like clemency itself:—

'Gif anie stranger be found within anie forbiddin place of the forest, & wil sweir vpon his wapons that he knew nocht that way to haue bene forbiddin, and that he knew nocht the richt way, the forestar sall convoy him to the common way, and there sall suffer him to passe away without anie trouble. But gif he be ane knawin man, he sall be taken and convoyed to the king's castell, and there, without the ports [outside the gates] of the castell, the forestar sall take before witnes his vpmaist claith [top coat]; and all quhilk is in his purse sall perteine to the forestar; and his bodie sall be delivered to the Constabill or Porter, to be keiped at the king's will.'

In fact, the Scottish forest laws dealt more severely with the wood-stealer than the poacher—*ne quis secet aut venetur*—the lamentable denudation of its timber which Scotland suffered after the recovery of her independence being exactly what the legislature of her early kings strove to avert. The *wiridiers* or verderers had special instructions for dealing with any man found 'heueand dune ane aik tree' (hewing down an oak). Note, by the way, the old form of participle 'heueand.' In Scots of 1609 (the

date of the translation of the ancient laws from which I am quoting) the distinction had not been lost between the present participle in *-and* and the gerund or noun of action in *-ing*. The two forms may be seen together in the following sentence from the same volume: 'congregation of men *dwelland* together . . . for the better *establishing* of their estate.'

I am conscious of some signs of impatience on the part of the reader who has got thus far. 'The fellow undertook,' he is muttering, 'to describe summer in a forest, and he can't get away from his dusty old bookshelves. These antiquaries really ought to be put down.' A timely rebuke: let us get to the forest with all speed we may; only be it understood that I have nothing to tell about deer-stalking this time, but about some of those pleasures which a deer-forest affords to those who will resort to it at unfashionable seasons while the velvet is still on the horn, who value its mighty solitude as the asylum of the golden eagle, buzzard, and osprey, the wild cat, marten, otter, and seal, as well as of the red-deer. Few of those who rent these hunting-grounds ever see them in their prime. They defer moving north till the evenings are getting short and chill, till the growth of herbage is stayed and the wealth of blossom past. The wild roses alone, which deepen in hue the farther you leave London behind, are worth a seven-hundred-mile trip to enjoy, but these come to an end with July. There is, also, a lovely little plant, the bog asphodel (*Narthecium ossifragum*), of which the blooming season exactly corresponds with the sweet o' the year. It is scattered all over the wet hillsides and bogs, gathering here and there into

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little swarms, brightening the dark peat and heather with its spikes of fragrant golden flowers tipped with scarlet stamens. People arriving about the 12th of August see nothing of this plant but its seed-vessels and rush-like leaves, both of which turn with the earliest frost to glowing orange and carmine, and are the chief element in the rich colouring of autumn moorland.

This delicate little lily contains a mystery in its modest frame. It is a native of the northern parts of both Europe and America, yet it does not occur in Asia, as almost every other plant does which is found wild in the other two continents; nor does it extend into the Arctic Circle, whence such plants as bearberry, common ling or heather, bracken, wintergreen, *Loiseleuria* (our only British rhododendron), and the lovely *Linnæa*, have descended from a common centre into all three segments of the northern hemisphere. Neither is the *Narthecium* one of those hangers-on of civilisation, like the nettle and coltsfoot, which follow man's footsteps to the uttermost parts of the earth, and thrive at the expense of his labours. No; the bog asphodel detests improvement, and shrivels into extinction at the very ghost of a drain. How, then, is its existence to be accounted for on both sides of the Atlantic Ocean? Shall it be subpœnaed some day as a witness for the lost continent Atlantis, like that apparently insignificant, but, as we are now informed, highly significant little fish, the so-called Australian trout (*Galaxias*)?

But we really must get back to that forest. To be frank, it was neither wild roses nor asphodels nor any zoological problem which I had in view when, one stifling evening last July, I rattled through the dingy approaches to Euston, in which the perennial odour of fried fish takes

the place of the more aristocratic, but not less pungent, reek of wood pavement. (There are zones in London—and the environs of Euston form one of them—where at all hours of the day and night fish seems to be a-frying.) No; my purpose was a very material one, and connected immediately with fish. As 'the stork in the heaven knoweth her appointed times; and the turtle and the crane and the swallow observe the time of their coming,' so not less faithfully do the great sea-trout—advanced guard of the annual host of their smaller fellows—keep their unwritten tryst and move up the streams shortly after midsummer. He who squanders July in London forfeits his prospect of prime sport with the gamest of all fish, for the trout that follow in the wake of the first run seldom attain more than two pounds in weight, being mostly 'herlings' or 'finnocks' of less than a pound each. Industrious netting has sadly impaired the angler's chances with big sea-trout in most rivers—has destroyed it altogether in some—for the legal mesh allows nothing above two pounds to escape. It is only here and there in the great playgrounds of the North that streams, mostly small, are still kept sacred to the mystery of angling, and that the fish still move up each summer from the tide in almost incredible throngs.

Well, within two-and-twenty hours of leaving Euston—so aptly does modern transport pander to our pleasures by facilitating sharpness of contrast—we were steaming smoothly between the mountain buttresses which shut off the winding fjord from the Atlantic. Drought was six hundred miles in our rear. It was a hot evening, but deliciously fresh; the green mountain slopes and dark crags were seamed with milky veins, for every burn was

brimming with the gracious rain. So impossible was it before leaving thirsty London to imagine the materials for a spate, that I had made up my mind that the first morning of liberty should be devoted to exploring a certain hill tarn, reputed to hold good store of ponderable trouts. Now this was my third visit to Knoydart forest. Forty years ago—an Eton boy not yet 'in tails'—I made the same resolve, and again last year; but this loch lies fifteen hundred feet up the steep breast of Creagan-Dochdair; to ascend that hill involves crossing the river; at each attempt the spell of running water has prevailed, for what man, when the river naiads beckon, cares to court the kelpie of the loch? and so it has come to pass that never to this day has my eye beheld, or my angle been cast upon, that lonely tarn.

Up the glen, then—up early, for the mist is down upon the hill, the rain clouds are lowering on the sound, the triple crest of Rum is blotted from view, the ash-trees round the lodge are moaning in their heavy verdure—everything bodes the coming of another spate.

The most impatient angler, if he would enjoy all the resources of his craft and take his fill of the delights of such a paradise as this, will have eyes and ears even for creatures that have no scales.

My eyes are about me, therefore, as I step it up the strath. The absence of birds is curious. The lofty ridge, some two thousand feet high, bordering the river closely on the south side, is dark and shaggy with natural wood, but the north side, along which the bridle-path runs, is open and lies fair to the sun. The track leads across several ferny, stony little glens, just the very place where one should hear the warning note of that true mountaineer,

the ring-ousel. Nevertheless no feathered thing is stirring save the all-pervading titlark, as faithful to the waste as the sparrow to the house-top, and two or three pairs of the amiable, elegant wheatear. The corrupt form of this name is a good illustration of the tendency, well known to philologers, of people of every language to twist words of which the meaning has been forgotten, so as to represent some other meaning, however irrelevant. Why, otherwise, should a bird which has no visible ear-covert, and certainly does not eat wheat, become known as the wheat-ear? The most conspicuous thing about the little creature is its dazzling white rump, which it displays continually as it flits from stone to stone before the traveller. What more natural, then, than that the countryman should give it in Anglo-Saxon the name of *hwit œrs* —white-rump?

But hark! the hanging wood beyond the river resounds with a shrill cry. Out with the Zeiss lens, and, following the gillie's brown forefinger, I can detect the crag where a pair of golden eagles have their eyrie. Their solitary offspring is still on the nest, and it is he whose voice sounds shrill above the rising wind. Suddenly from the mist on the top out sails a dark form on broad pinions. One of the parent birds swoops in narrowing circles towards the eyrie. The cry of the nestling is stayed, but, so far as the glass reveals the secrets of this household, the queen-mother brought nothing in her talons. Queen! yes, but a discrowned one. These men of science are terrible revolutionaries—not republicans, mark ye, for they must have a monarch; but they have dethroned the eagle—the very emblem of empire, and we are told now to reverence the crows as the legitimate royal family,

in virtue of their higher organisation and intellectual powers.

But the wind is beginning to boom in stronger gusts up the pass; the sky has stooped to join the mist-skirts on the hills; already heavy drops are flying, and seeing what a 'kittle' stream is the Amhuin Aoidh—Hugh's River—it behoves us to push on to Linfad if we would make sure of a few hours' fishing before the coming of the great spate.

For the greater part of its course this stream is a rapid water, chafing through rocky gorges, battling over gravelly fords, or slipping swiftly among bending meadows; but about three miles above the lodge it slumbers for half a mile in a deep, canal-like channel. The best pool on the river, this, for holding fish—whether salmon or sea-trout—which make leisurely pause there in their annual journey to the loch, whence the river issues; albeit a pool like that which was called in the Hebrew tongue Bethesda, whereof a man must await the troubling of the water before he can derive any profit therefrom. Bravely the breeze buffeted it to-day, and the sky was of the kind preferred by crafty Richard Franck—'promiscuous and dark, occasioned by smooty and discoloured clouds'; the reach lay steel-gray in the green strath; no Jewish cripple was ever more tremulously keen than I to reach the water's edge.

With a twelve-foot rod you can cover every place where a fish lies in Amhuin Aoidh;[1] but the water is as clear as gin, and you must stand well back, which a light fifteen-footer enables you to do easily. There is a good chance of hooking a salmon in Linfad, but nothing of the dignity

[1] Pronounced Avon Æ.

of a salmon-fly must be displayed—only smallest grilse, or medium sea-trout sizes, on fine gut. Such was the gear I was rigging when a clean-run grilse sprang high above the wave to encourage me, and in three minutes more a tiny Dunkeld—a fairy-like creature with golden body, masking a couple of keenly barbed points—was dancing over his lair. What a brave dash it was that bent the supple greenheart, and sent the reel spinning! *Habet!* he is fast, and fiercely resents the knowledge thereof, tearing down to the very brink of the cascade, where the water leaves Linfad. It flashed across my thought what a rare lesson this would have been for that dear old bottom-fisher, Izaak Walton, whom his irreverent contemporary and rival, Franck, denounced as a fumbler and plagiary, 'scribbling and transcribing other men's notions,' and who never saw a fishing-reel in his life, only had it on report that 'some use a wheel about the middle of their rod, or near their hand, which is to be observed better by seeing one of them than by a large demonstration of words.' This would have been the moment for him to put in practice the manœuvre he prescribed to trustful Venator:—

> 'It may be that by giving that very great trout the rod—that is, by casting it to him into the water—I might have caught him at the long run; for so I use always to do when I meet with an overgrown fish.'

But it is seldom that a fish will run of his free will out of a good holding pool where he has been hooked, and just as I am getting apprehensive of grief in the gorge below, this one turns sharp, races up again, and throws himself high in the air.

Basta! it is not a salmon at all: nothing nobler than a two-pound sea-trout, than which, however, no fish that swims makes a fight so headlong, so disproportionate to its size. This one has disturbed a good piece of water, dashing into every lair and scaring fish four times his own size. I must rest the tail of the pool, and try higher up. The rain is falling in sheets now—

'How should I the shower forget?
'Twas so pleasant to get wet'—

and the gusts are so heavy, it is no easy matter to straighten fine gut across them; but it is a proper day for Linfad. At the sixth or seventh cast a long silver gleam shines through the water below the fly, the line tightens, and this time I feel I am fixed in something better. It swims deep and slow, not realising its predicament, for it cannot see its foe standing far from the bank. But as the line shortens, this new customer catches sight of me, and then the fun begins; for it is the fear of man, not the pain of the hook, that makes a fish fight.

No creature so incorrigibly prosy as a fisherman, even when he confines his narrative within the limits of fact, and the worst part of angling yarns is that they are so much alike. I persevered at Linfad till there were stretched on the bank three lovely grilse, weighing close on seventeen pounds, and five sea-trout which made ten pounds more. Then the flood was upon us, and I trudged happily homewards down the seething strath.

Now any reasonable being should be well content with summer sport like this. So pleasant and profitable had been the looting of Linfad that nothing better could be desired than to renew it on the morrow, when fresh store of sea-fish would assuredly have run up. But man—of

the sub-species Piscator, at least—cannot always be reckoned reasonable. The 'last infirmity of noble minds' must always be taken into account as a disturbing element; and, just as it landed the great Napoleon in Longwood, so it brought discomfiture on me this day. Four or five miles across the hills behind the lodge, and parallel with Amhuin Aoidh, lies Strath Guseran, through which flows—or rather flies—the Guseran, a torrent only to be fished successfully in a few hours of falling flood. It is not always easy to sift history out of myth: perhaps the records of great fishings in this stream are open to be impugned. Nevertheless, they exist, and are of the kind to fire every latent spark of ambition. On the morrow, therefore, rejecting the wiser gillie's counsel, I was off betimes to the Guseran. It had rained all night, but was now clear—the very concatenation of conditions most favourable for that fickle stream. It was tumbling about in fine style among its grand rocks, and the delusion was well sustained for some time. A salmon slipped up and missed the fly from the slack water beside a rushing stream; nothing would induce him to return. Precisely the same thing happened in the next resting-place: rather provoking, but not discouraging, for the day was still very young. In a third lodge things went better: the fly was seized close to the foot of a cliff, and the tug-of-war began. There was not much scope for tactics: the pool was no more than a pot, and the current was tremendous. Twice or thrice the fish ran perilously near the rapids: once let him get into them, and he was free, for the tackle was far too fine to hold him. Ah! I thought so; losing his balance, he topples over the verge and rolls away down the rapids far faster than I can scramble after him.

Labouring heavily over the rocks, I come to an *impasse*: a big alder stands well out in the water, and unless I can get round it there must be a smash. Nothing for it but to take the water. Luckily it is not more than waist-deep; the obstacle is circumvented, and once more fish and fisher are on terms. Fifty yards more and we reach a pool where the issue must be fought out: Angus makes clever use of a chance with the gaff, and draws up on the heather—not a salmon after all, but, much to my surprise and chagrin, a sea-trout. A good one, it is true, scaling 5½ lb., but still only a sea-trout, which, as every angler will admit, is inferior quarry to *Salmo salar*, and not worthy of being recorded by a notch on the gaff handle.

At spes infracta! There was plenty of good water before me—one pool, especially, called *par excellence* the Salmon Pool. Here the Guseran gathers all its dignity to form a fitting theatre for the angler's triumph. Between cliffs thirty feet high the water pours through a narrow gorge for fifty yards, then spreads into a smooth, foam-flecked pool, with a steady current through it—the very ideal of a salmon cast. It was in perfect order this day, and the only anxiety which haunted me was lest the fish which I was about to hook should disturb the whole premises; for it is an awkward place to work, casting being only possible from the top of the cliffs. In the very choicest bit of the water a salmon of 10 lb. or there-by made a pretty rise, not at my fly; but I cast over him in perfect confidence. Nothing happened! no thrill of tightening line, no flash of turning fish: there was a spell on the river; clearly it was bewitched. Not only in this pool, but in every other for the rest of that day, was the result the same. The midges came out in their millions

—still I persevered, and towards sundown retreated, a beaten man, vowing that never more should line of mine be straightened over the Guseran till its waters had been soundly exorcised.

Salmon are intensely conservative: year after year the great fish return to the same pools and streams which sheltered their forefathers a thousand years ago. Often the only favoured lodging in a mile of water consists of a few square yards, the shelter of a submerged boulder, or the shelf of a bank of glacial clay. Such fish haunts invariably get specific names, some of them being exceedingly ancient with a pleasant measure of mystery about them. Sometimes the meaning is quite obvious: for example, there are very few Scottish salmon-rivers without a cast called the Corbies or the Gled's Nest (there are at least three 'Corbies' on the Tweed, although it is many, many years since the raven was suffered to breed on that fair stream). More often the meaning is more obscure—the Cradle, for instance, of which there are two on the Tweed, and many elsewhere. Often these names commemorate animals, and even races of men, long since passed away.

It is not always that one can read the riddle of these ancient water-names. In Scotland, at least, where Gaelic was not a written speech before the sixteenth century, all that remains of them is their sound on the lips of the peasantry and the rude attempts at phonetic rendering thereof in Latin or English charters. But Ireland had a copious Gaelic literature in very early times, by means whereof one is sometimes able to detect a different significance in names which have received identical spelling at the hands of modern scribes. Thus

Lough Derg denotes two sheets of water in Ireland, one in Donegal, the other that great overflow of the Shannon between Killaloe and Portumna. Of the first, one may assume that it received its epithet *dearg*, red, from some local colour either in the water or on the banks, and that it is the Red Lough on a similar principle to countless others in Ireland named Lough Doo, Glaslough, Finloch —black, green, or white loughs. But of the second, the Celtic literature of Ireland, which is never so graphic as in recording deeds of violence and cruelty, has preserved the story, showing a different origin of the name.

It is not for nothing that the arms of Ireland display a golden harp, seeing how powerfully the bards of old swayed both the people and their rulers. So we read in *Talland Etair*, an ancient chronicle of the siege of Howth, how one Aithirne, a most accomplished harper and bard of Ulster, travelled throughout the land of Erin, making sojourn with every king in whose territory he arrived. He was a proud man, this Aithirne, and would brook hospitality only from royal hands; but he had plenty of entertainment, for the kingdoms in Erin were numerous in those days of difficult locomotion. It was his practice, on leaving each royal palace, to demand a present from his host as a reward for his minstrelsy, and none was so daring as to refuse whatever he chose to ask.

It came to pass that, during his visit to Eochy mac Luchta, King of Connaught, Aithirne took serious umbrage at some details in cookery or what not; so when the time came for him to take his leave, he expressed a desire to take also the king's eye with him. Unluckily, King Eochy had but one eye, the other having been knocked out in battle; nevertheless, whether he dreaded

lest a refusal should bring some worse evil than blindness upon him, or whether he thought even blindness not too high a price to pay for riddance from his terrible guest, he tore out his eye, and handed it to Aithirne. Then, leaning on an attendant's arm, he bade him lead him down to the lake, where he stooped and washed his gory face.

'Lo and alas!' exclaimed the servant, 'the very waters of the lake are reddened with the blood of a royal line.'

'Then,' said the king, 'let its name be Loch-deairg-dherc —the Lake of the Red Eye—for evermore.'

Other waters there are in Ireland named from their colourless transparency, such as Finisk, a tributary of the Blackwater. The name is a compound of *fionn uisc*, white water, and has undergone strange metamorphosis in the metropolis of Ireland. Where the great pillar stands outside the grounds of the Vice-regal Lodge there springs a clear, bubbling source, which flows as a rivulet through the Zoological Gardens. *Fionn uisc* [feen isk] the Erse called it of old—the clear water—which, when the English conquerors set up their pale and decreed that the sound of the ancient language should no more be heard within it, became easily corrupted to Phœnix. Lord Chesterfield confirmed the illusion in 1745, when he set up the pillar aforesaid, crowning it with the figure of the mythical bird rising from its own embers; and now, most people will tell you gravely that the Phœnix Park took its name from the pillar!

Thus, on the Cree (the *crioch*, or boundary, between eastern and western Galloway) you may still see the marsh which gave its name to Linloskin, the pool of the frogs. The heather has all been ploughed away from Linree (*linn fhraoich*), and no badgers may now be

found near Carse-na-brock; but still, on the neighbouring Luce, Lincòm runs in the sharp sweep which earned for it the name of the crooked pool, and local history confirms the justice of the title borne by the Bloody Wiel, where the Linns of Larg and the Hays of Park once settled their differences.

More than one salmon-pool has earned historic distinction from its name being adopted as a personal one. Thus, if in passing south from Ayr you will look out on the right side at Dalrymple station, you shall see how the bonnie Doon makes a sudden circular sweep round three sides of a flat and fertile piece of ground—*crom pol*—the crooked pool—whence the level ground became known as *dal-chruim-puill,* the land portion of the crooked pool. In time, when the need arose for surnames, the possessor of this land became known as Dalrymple, whose descendants have carried the name to glory as statesmen, soldiers, and lawyers.

But I have said enough already in another of these random papers—too much, the reader may think—on this subject. Perhaps my best excuse for maundering over what Porthos denounced as *un plaisir roturier*—angling and its pertinents—may be found in the fact that my own name is derived from a salmon-pool. Maccus the son of Undwin, and great-grandson of that other Maccus who thought it no shame in 973 to attest a charter of Edgar King of England as 'Archipirata'—arch-pirate—obtained from David I. of Scotland certain lands adjacent to Kelso, comprising a productive salmon-pool, which soon became known as Maccus' or Max's wiel. The lands took their name from the pool; the descendants of Maccus became, in the feudal manner, De Maccuswell or Maxwell, and

still the Tweed angler holds in high repute Maxwheel, an excellent salmon cast just below Kelso bridge.

We have heard a good deal of late about the cruelty of field-sports in general and of fishing in particular: the charge is made by people entitled to respect, and is altogether too serious to be disregarded. It is well to have a clear understanding on the ethics of the contemplative man's recreation. Fish, if they are to be taken at all, and not left to devour one another, must be captured either by nets or by hook and line, and I am prepared to defend the opinion that no more actual suffering to the fish is involved by the one method than by the other. It has been observed above that it is the fear of man, not the pain of the hook, that makes a fish fight for freedom. I can testify that the pain of a large salmon-hook fixed in the human lip, far more sensitive than a fish's, is very trifling, even though it was necessary to strip off the dressing and bring the hook out the reverse way. But, the spate in the forest having run down, I was witness of a scene which convinced me that capture by the net is not one whit more merciful than by rod and line. Besides the Amhuin Aoidh and the Guseran, there is a third river in Knoydart forest, flowing through a glen so remote and so difficult of access, and subsiding so rapidly after a flood, that it is very seldom fished by any angler. Once a year, therefore, the owner causes a net to be drawn through a couple of pools in it, which is made the occasion of a little festival, for it is fine fun in hot weather, and the spoils are greatly appreciated by the crofters and villagers among whom they are shared. It was a glorious morning when the yacht left her moorings and steamed ten miles up the loch to the mouth of the

Carnach. Ponies had been sent round by land overnight to carry the net, and for the transport of such ladies as did not fancy a tramp over three miles of rough moorland lying between the shore and the scene of operations. The deer on the tops gazed from afar at the motley cavalcade invading their special domain, and a pair of ravens croaked execration on us as they soared far aloft in the azure. The first pool to be drawn was a rocky basin less than forty yards long, with a shelving gravelly bank on one side of the lower end. It was very deep—so deep that although the river elsewhere was reduced to a mere trickle among acres of shingle, and although the water was exceedingly clear, without the faintest stain of peat, the eye could not pierce to the bottom. A guard was set to prevent the fish escaping down stream, the net was quietly slipped in at the top, and as it moved slowly down the greenish depths became agitated by a great multitude of fish rushing about in terror. Presently the net stopped: some obstacle, a great stone, had caught the leads, and failure was imminent. An Etonian present offered to dive to its release; the ladies withdrew out of sight, and presently, with a magnificent header from the rocks, he was down among the fishes and freed the bottom line. The net was then drawn ashore, with the humiliating result of half a dozen sea-trout. It had been damaged, and all the other fish had escaped through a large hole. They were still in the pool of course, and as I lay on the rocks I could perceive them coursing up and down. Three of four salmon in particular I watched, never still an instant, now sailing up to the shallows at the top, then, catching sight of an enemy, dashing away in hopeless search of shelter. Thinks I to myself, each

one of these fish is suffering just as much through fear as it would if hooked by an angler: the presence of a tiny barb in its gristly jaw would be but an imperceptible addition to its tribulation. And then consider how much prolonged was the persecution. From the first immersion of the net to its final bringing ashore, after the necessary repairs, full of fish—half a dozen salmon and several scores of sea-trout from 2 lb. up to 5 lb.—was not much under two hours; whereas any capable angler would have backed himself to land the biggest of the salmon in ten or fifteen minutes at most. If, therefore, I am right in my contention that the suffering inflicted on a fish in its capture consists solely of the agony of fear, then it must be conceded that the balance of mercy is not on the side of the netsman as against the fair angler. Note, also, that the draft used on this occasion is the most expeditious of nets: the trammel, whammel, or hang-net, now prohibited by law in Scotland, but still in general use by Irish fishermen, kills salmon by slow strangulation; the stake and bag-nets keep them imprisoned for many hours; but the salmon's tussle with the angler is reckoned by minutes. With clear conscience, then, may every fair fisher echo Tom Stoddart's stave—

'A birr! a whirr! the salmon's up,
Give line, give line and measure;
But now he turns! keep down ahead,
And lead him as a child is led,
And land him at your leisure.
Hark to the music of the reel!
'Tis welcome, it is glorious;
It wanders through the winding wheel
Returning and victorious.'

XXVII

The Valley of Enchantment

If the Romsdal has any European rival in stupendous, reckless grandeur, such is not known to me. Probably nowhere else, except in the Yosemite Valley, or in the gorges of the Indus above Khalsi in Ladak, shall you find opposing precipices of such height so near together. In Romsdal at its narrowest there is little question of gradient: there is scarcely room for anything but a sheer plunge of 6000 feet from the towering crests of the Troldtinder—the Witch Crags—on the west of the chasm, and from the pinnacle of Romsdalhorn on the east side thereof, if space is to be left for the imperious Rauma to roll its volume to the slumbering fiord. Far aloft, wherever there is a breach in the leagues of battlement, you may catch sight of the selvage of the great snowfield, parent of a thousand cascades: even at midsummer, snow loops every ledge and curtains every slope, down as far as the wooded river-banks; for if summer be bright here, it is passing brief, and one is not suffered to forget the long dark months when neither sun nor moon shines into Romsdal, only the cold stars.

Here and there, recessed between mountain bastions, is space of level meadow-land, deep with cool verdure, fringed with alder and rowan, birch and bird-cherry, and broidered with crimson orchis, russet sorrel, snowy buckbean, bluebells, purple geranium, lavender scabious, golden ranunculus, and hawkweed. Elsewhere, slopes of *débris* run as a kind of *fausse braie* along the mighty rock curtain, clad with a gracious woodland, through which avalanches have driven many an avenue. Here

is stored all manner of treasure for the botanist. Even if you have no patience for genera and species, you cannot fail to be struck by the contrast between the fragile and delicate beauty of the northern flora and the massive, gigantic features of the landscape which it adorns. You may revel here in profusion of such fastidious flowers as anxious amateurs at home coddle through a precarious existence among the grosser growths of the herbaceous border. Here are stately groups of purple larkspur and rosy willow-herb, close battalions of lily of the valley, with skirmishing companies of its modest cousin *Smilacina*. Here, too, the dainty *Trientalis* poises its solitary white star upon a thread-like stem above a girdle of wan leaves, and the winter-green (*Pyrola*) rears sturdy little columns of waxy bells and pearly buds. The stonier places are spangled with the quaint blossoms of the dwarf cornel, each of them composed of four showy white bracts encircling a cushion of deep purple or puce florets. Pure white also, but with golden centres, are the blossoms of that true forest nymph *Dryas octopetala*, which drapes the rocks with abundant foliage like miniature oak-leaves, but of deeper, glossier green. Here, also, a real thrill lies in store for him who cares for the green things of the earth, yet who, like myself, has never before seen the tiny, trailing honeysuckle in its native sub-arctic haunts—the exquisite *Linnæa borealis*. It abounds in nooks among huge fallen boulders, rearing its twin roseate bells and twining its fairy garlands among juniper, bear-berries, blaeberries, and oak and beech ferns. Its own loveliness apart, it commands a meed of special reverence from every disciple of the great Master, Linnæus, for upon this lowly herb he bestowed his own name, this

he chose as his own emblem and united for ever with his own motto, *Tantus amor florum*—'So deep is my love of flowers.' All these plants, it is true, save the larkspur, and many more that might be named, were not the patience of readers to be reckoned with, are still to be found in Britain; but they are children of solitude, and sorrier are the strips into which, year after year, British solitudes are gnawed by all-conquering industry and all-devouring tillage.

But I have not crossed the North Sea merely to prate of botany, nor yet with the loftier aim of one of my fellow-passengers in the steamer from Newcastle, who had come all the way from Australia to study astronomy in the land of the midnight sun. A certain wooden case, narrow, indeed, but more than six feet long, having caught his attention among my baggage, this gentleman took an early opportunity of expressing his delight that I had brought my telescope. 'Telescope,' quoth I; 'I have nothing but these,' showing him a pair of Zeiss lenses. His countenance fell. 'Is not that a telescope in your long box?' he asked. I must have dropped leagues in his esteem when I had to confess it contained nothing more creditable than fishing-rods; for salmon-fishing was the grossly material object which was luring me into the Valley of Enchantment, and perhaps nowhere else can it be had of a higher quality.

Yet the best of it is confined to a very limited stretch in this fine river. For some six miles above the sea the Rauma sweeps in a series of majestic reaches having all outward semblance of noble salmon casts, in volume somewhat equal to the Tay at the famed Linn o' Campsie. But for some occult reason the fish will not rest in these

lordly lodges, or, resting, will not rise freely to the fly. They hurry up to the neighbourhood of the foss of Aarnhoe, which is placed exactly where the mountains upon either side of the valley approach each other most nearly. Scenery cannot be set forth in figures of measurement, yet some idea of the grandeur of this gorge may be conveyed by repeating that, whereas each side thereof is formed by bare cliffs 6000 feet—*i.e.* one mile and 240 yards—in height, and absolutely vertical in places for 1500 feet, the space separating their bases is less than half a mile. The foss itself is the result of the fall of a huge slice of the Troldtinder right across the valley, and the river roars and rages in white fury through and over the ruins of the mountain. It passes human lore to assign even a probable date to this cataclysm; but still you may see the vast chasm whence the mountain was torn from its roots, leaving a scar far lighter in colour to this day than the storm-stained surface of the remainder. Who knows whether of peaceful homesteads is here the sepulchre, or whether the fall happened before man had seized the lordship of the dale. Even now, hardly a day passes that the valley is not startled by a din, sharper than the roar of artillery, and followed by a prolonged rattle as of musketry, as some mass of rock or cliff face topples over and falls for thousands of feet, leaving a dense column of dust in its track.

The aforesaid foss of Aarnhoe offers an effective barrier to the ascent of salmon until well on in summer, when most of the snow has melted and the river has fallen low; consequently the cream of the fishing in June and July is found in a couple of miles of water below the foss. It was a very late season when the busy little steamer from

Molde set me down on a June afternoon at Veblungsnæs. The river was still rather too high for good sport, and, on arriving at my destination, a charming wooden house within sight of the foss of Aarnhoe, my host and hostess met me with the discouraging announcement that they had nor stirred a fin that day. Now it was Saturday, and the Norseman's Sunday begins at 6 P.M. Already the hour-hand pointed to 5 o'clock; but, when offered the alternative of the tea-table or the riverside, who can doubt which I chose? It was my first visit to Norway, and every moment of a brief holiday should be well spent.

Striving, but surely in vain, to keep an appearance of polite indifference, I said I would like to have a look at the river, and forthwith began with trembling fingers and throbbing heart to unpack my kit. A river of renown in Norway is to the angler what High Leicestershire is to him who has never hunted save with provincial packs: to command success in either demands faultless equipment, for the odds are heavy that every point thereof will be tested to the utmost it will bear.

It boots not to describe the famous Rauma. Happy those, and they are many, who have seen and fished it: of those who have not done so, many must have drawn delight from the late Mr. Bromley Davenport's narrative of encounters with mighty salmon therein. His book, tersely entitled *Sport*, has long since been numbered among the choicest classics on the sportsman's shelves. Suffice it to say that the first thing which struck me on embarking upon this stream was that Mr. Davenport had by no means overcharged his picture. Fishermen and poets enjoy this in common, that they claim, and are universally accorded, exemption from the rigid shackles

of mere veracity. 'The angler,' quoth an American cynic, 'goeth forth in the morning, and returneth at night; the smell of whisky is upon him, but the truth is not in him.' True it is that if one unacquainted with the craft were to form his estimate of salmon-fishing from the description thereof in sporting journals, he would pronounce it a pursuit fraught with extreme hazard of a watery grave, and to be accomplished only with almost superhuman exertion. The salmon must appear to him a creature endowed with the energy of a torpedo, leaping at times twelve feet into the air and running out such prodigious lengths of line with such exceeding swiftness that an incautious finger might easily be cut to the bone. But those who have fished much in British waters wot well that, although the noblest of fishes often exhibits an agreeable degree of violence, it is exceedingly seldom that he takes out a hundred yards of line or leaves the pool in which he is hooked. In a river like the Rauma it is different. There he is not only described as doing such things, *but he is pretty sure to do them*; for the angler has to reckon with more than the strength, spirit, and dead-weight of his quarry: the volume and swiftness of the current count for a full half of the chances of combat, and occasions will arise when nothing less than 200 yards of line will serve to ensure success. This I was about to realise in the few minutes remaining before Sunday.

I have said that my first feeling was to acquit Mr. Davenport of the amiable exaggeration which I had thought discernible in his description of the stream.

'The field of battle is before me,' he wrote, 'white and tumultuous at the head, smooth and black in the middle,

full of surging bubbles like the ebullitions of millions of soda-water bottles from the bottom, clear, swift, and transparent at the tail.'

Here Mr. Davenport was writing of the great pool below Aarnhoe foss, but only one epithet was amiss if applied to the pool of Tofte before me—'black.' There was nothing approaching blackness: all was colour, delicate or intense. The deepest hues came from submerged rocks in mid-channel, which showed a soft purple through the superb sea-green depths. Clear, swift, and cold, the mighty river swept round the base of the towering Romsdalhorn—so clear, that in the comparatively smooth water near the sides you might see every boulder, nay, every pebble and sand-rib, on the bottom, fifteen feet below—so swift, that it seemed scarcely fit resting-ground for any living creature—so cold, that, even on this sultry June evening, one could not envy the animal whose nose should be exposed to such a torrent flowing directly out of glaciers and off snow-fields. Yes, it was indeed a melting evening in this high-walled gorge, whither, at midsummer, night cometh not at all and into which the sun pours for eight hours with radiance and heat intensified many-fold by radiation from leagues of bare cliff. It was only the approach of the Sabbath which justified putting a fly over the stream so early on such a broiling afternoon; for although the envious Troldtinder had shut the orb of day from sight at four o'clock, his radiance was still reflected with intense power from the upper half of the Horn, and angling is usually suspended till such time as 40,000 cabs and 10,000 carriages are bearing their freight to the myriad dinner-tables of London, and the Government Whips are exhausting all the arts of blan-

dishment and menace to preserve a majority during the critical dinner-hour.[1] From eight o'clock till midnight, and again from any hour you please till eight in the morning, is the usual fisherman's day in these latitudes; and, although the great height and nearness of the mountains east and west of the Rauma afford a more liberal margin of time, it is wise to take advantage in this very clear water of all the gloom you can get. By the bye, when is cockcrow during summer in Norway? Eggs appear on the breakfast-table with exemplary punctuality—at this moment I can hear the cackle of a successful hen; yet have I never heard chanticleer proclaim the morn, although I have been abroad at all hours.

But let me get on with my yarn. Norse fishermen show a philosophic indifference about the particular pattern of fly which may be used. About size they are reasonably solicitous: the lure must be large enough to be visible from great depths, yet not 'very much big' to excite suspicion. In this respect they are laudably superior to our own gillies, and especially to Tweed boatmen, who tyrannise unmercifully and quite irresistibly in the matter of colour and material, prescribing silver for a cold day, black for a hot one, a Wilkinson for frost, and a Kelly for sunshine, with as confident dogma as if, like many another dogma, it were not a mere mask of ignorance and *a priori* speculation. So I was left entirely free to decide with what pattern I should essay my first enterprise in Norwegian waters. Happy are those whom, like

[1] Since these notes were written that new and excellent rule of the House of Commons has been framed, providing for adjournment from 7.30 till 9 P.M.

myself, a profound scepticism delivers from the anguish of hesitancy and misgiving, and enables them to attach to the line a crimson and gold Manchester Swell with exactly the same degree of confidence as they would put up a sable and silver Mar Lodge or a polychrome Popham. Indeed, if there be any guiding principle in this matter—if salmon are gifted with the powers of discrimination with which some people credit them—surely the aim of the angler should be to present them with something as different as possible from the lures with which they may have become familiar. Certainly upon this occasion I could reckon upon no proved partiality on the part of the salmon I hoped to catch for the particular pattern which, coming first to hand, was chosen for the task, inasmuch as the like of it had never been seen upon the Rauma before. It was a purely local fly from the Cumberland Eden, reckoned there as 'great medicine,' and known as the Bulldog—though the reason is not exactly on the surface why a creature with a bright blue body, a silver tail, red hindlegs, and black and yellow wings, should bear that title. The only one that suggests itself is that it resembles a bulldog quite as closely as it does any known species in the insect world. What, after all, is there in a name? Those who have enacted the part of lovers tell me that at times their feeling toward the object of their flame is so intense that it can only find expression in the ejaculation 'Well, you *are* a duck!'—an assertion which, taken literally, cannot be considered complimentary either to the figure, features, or mental attributes of any nymph.

By the time the Bulldog was ready for business it was half-past five; yet, just as Wellington defeated 40,000

Frenchmen in forty minutes at Salamanca, so, I felt, might laurels be won, or at least a fish landed, in half an hour. Presently the cock-nosed skiff bore me dancing over the waves; the boatman bid me cast into a rattling stream and bring the fly round into the comparative calm. I did so until six times; the seventh, or thereby, there was a slight commotion behind the Bulldog—so slight as might have escaped attention in the tumult, had I not caught sight of a fin above the surface, and felt a tiny twitch on the line. Nothing more. That fish may have been the 40-pounder in quest of which I have vainly squandered so many days, or he may have been but an impertinent grilse of 5 lb. A couple of inches of fin thirty yards away afford a very slender basis for computation. Vain were all attempts to wheedle him into a closer intimacy; a sunk fly and a jigging one, a fast fly and a slow one, all proved ineffective, and we floated on. Twenty yards lower down the line suddenly stopped; up went the rod, and I was fast in something solid. A rock? no, a delicious wobble gave assurance that the obstacle was alive, and presently the reel began to revolve, slowly at first—more swiftly—wildly at last, as the fish tore away to the distant shore. My reel held a hundred and twenty yards of trusty line, but, as I stepped out of the boat, there was parlously little left upon the drum. Once ashore, however, I could exert the utmost pressure. It is not always present to the angler's mind what that utmost amounts to. Good treble gut will stand a strain, say, of 8 or 10 lb. Pulling with a rod of eighteen feet, held at an angle of forty-five degrees, you *cannot break* such gut. How then does it happen that such gut sometimes *is* broken by a fish? Indubitably because one of two things

has happened: either the rod has been dragged or allowed to fall into something approaching straight with the line; or the fish has succeeded in getting a pull or making a leap against a fixed point between him and his would-be captor. Such a fixed point may be caused by the line getting foul of an obstacle under water, or by getting 'drowned'—*i.e.* when a great length of it bags deep and down-stream, and the fish runs up-stream and jumps.

The thing is easily proved. Hook your fly to a spring-balance in the hand of another: I'll give you a guinea if you can pull the index down to 4 lb. *with your rod*, and keep it there. Sandow himself could do no more; the law of dynamics (of which, *s'entend*, I am profoundly ignorant) is against it. Three or four pounds, therefore, is the maximum pressure any man can put on a fish with his rod, even though he feels that his own muscles are strained to their utmost; but 3 lb. rightly applied to a 20 or 30 lb. fish must win in the end, if the hook hold. But the pressure must be rightly applied. Stand with a fish down-stream and pull straight at him—you may spend half a day and be no nearer landing him; but make the pressure lateral—get opposite or below him—and you pull him off his balance: he must leave his lodge and run for his life.

These tactics soon brought me on better terms with my maritime friend. The thin backing was all recovered; just as the first of the fifty yards of head-line was coming on the reel, a sudden thought seemed to strike him—'I'll be off to sea again.' Away he went, this time not across but down stream: I could not follow him on foot, for the bank was fringed with alders; before I could take ship again he was in the swift water at the tail of the pool.

Tostern bent to his oars and shot after him; then, poising his craft with her nose to the stream, allowed her to glide swiftly down after the fleeting fish through a hundred and fifty yards of tossing rapids, till we floated upon the even surface of the next pool, Langholmen.

The battle was nearly won now: I could see my fish under the lucid wave—a pale-bluish phantom—and now the pale-blue turned to gleaming silver as he floated upon his side on the surface, beaten, and allowed me to tow him within reach of a sharp point and a steady hand, and at five minutes to six we weighed my first Norway salmon—21 lb.

Let not the fisher fagged with unfruitful toil in some Scottish stream imagine that it is always this simple *venio —video—vinco* business in Norwegian waters. Salmon in Scandinavia, as in Scotia, are just the same capricious, inconstant, unaccountable creatures; subject to similar simultaneous moods of inertness, of indifference to all lures, or, again, of watchful curiosity, ready to seize the first thing moving near them. As a rule, the fisherman is like the sun-dial—*horas non numerat nisi serenas.* He is discreetly silent about the countless hours he squanders vainly flogging the flood.

Let me give as examples my experience of two typical days in the present year of grace 1900. The first was on the last day of February, in that region of Scotland which partakes more of Scandinavian character that any other, and *was* actually part of the kingdom of Norway till the end of the twelfth century—the counties of Caithness and Sutherland. There the people, though infused with a measure of Celtic recklessness and Saxon gruffness, are mainly of Scandinavian blood and temperament; there

the land-names are chiefly in the old Norse language; there, too, the sun of summer succeeds in banishing night almost as effectively as in Norway itself. Brief in proportion are the winter days; even at the end of February, within a month of the equinox, a full hour of daylight is filched by the envious shades more than in the latitude of London. Wherefore it behoves him who would do justice to his luck to be astir betimes, and it was that feeling which took me to my beat that morning on the Helmsdale before a forbidding rime-frost had risen off the land. The Helmsdale has much the character of a Norse river, rolling swift and strong so long as the snow-field lasts; dwindling to insignificance when that is exhausted. It bears the name given to its strath by the Norse conquerors—Helmsdale—the old Gaelic title being Amhuin and Strath Ullie.

Well, I began operations in the frost, and in the first passage down the pool three fish came to the fly, but not one would take hold. About ten o'clock the sun came over the shoulder of the Ord; the unkindly cold fled before it, and straightway ensued a phenomenon, the like of which I have never seen before. Eleven spring-salmon rose in succession, each one went as near swallowing a large 'snow-fly' as he could, and each one paid the penalty of death for his curiosity.

Now set against that the experience of this very day on which I scribble these desultory lines. It is in Romsdal, at the very cream of the season—the first week in July. A week of cold wet weather, accounted very unfavourable for sport, has just passed away, during which we got fish daily, and good ones too. The oracle of the river—the excellent old boatman Tostern—bade us wait till the river

fell within certain marks and the weather became 'a little much warm.' Well, yesterday the wind went to the south, the sun shone forth, salmon were plunging in every stream, the river was pronounced to be in perfect trim, all boded for the best; yet last night from six o'clock till ten, this morning from six o'clock till nine, three rods have been plied, and all the choicest confections of Farlow and Jamie Wright displayed in vain; and not a single fish hangs in the larder. Great salmon rolled and bounced and rose in that seductive 'head-and-tail' fashion close round our flies, but sorry a one could we induce to lay hold.

While, then, the flavour of Scandinavian sport is heightened by a due seasoning of uncertainty—an element so essential to excitement—assuredly there is no lack of the salt of danger. Not risk of life or limb: after a man's tenth lustre has been added to the irrevocable, he ceases to hanker much after that; but hazard of losing a good fish after hooking it. There are places in the Rauma, seductive lodges in the foss of Fiva (a couple of miles lower down than the foss of Aarnhoe), where you may easily tempt a heavy salmon to the fly, thereby only courting almost inevitable disaster. Other places there are—the stream of Lærnesset, for example, just above the said foss—where, at a certain height of water, the odds are about three to two in favour of raising and hooking a fish, and about five to three against landing him. The river, reuniting at this point after dalliance round some islands, swoops in a swift curve upon a sharp incline, and shoots down into the roaring foss. Once fast in a fish, there is only one chance of bringing him to the gaff—namely, to steer him into a bay or back-water by sidelong

pressure of strong tackle: if he runs or is swept past that haven, then there is nothing else for it but to hold on and wait till something breaks, either the weakest link in the gear or the hold of the hook, because follow him you cannot down these rapids, rocks and trees barring the way. Certainly the amateur in adventure cannot do better than cast his angle in such a place as Lærnesset, but mishap may befall the least ambitious in other pools.

The river had fallen fully eighteen inches since my arrival a week before, when, one evening lately, I embarked upon the pool below the foss of Aarnhoe—the same wherein Mr. Davenport hooked his 43-pounder, which yielded not its life till it had run down more than a mile of river. Classic ground, yet not of the sort to daunt the hopes of facile conquest, for there is ample sea-room within this splendid pool to exhaust the most powerful salmon. Several times during the week I had seen a fish rise here of very stately proportions, anywhere between 30 and 40 lb. in weight, but hitherto he had refused all invitations to closer acquaintance. A strong tug beside the 'soda-water' near the top sent my heart into my mouth; yet this was not the big fellow, but a lively one of 14 lb., which in ten minutes lay safely on the silver strand, and we pushed off on a second venture. Half-way down the tossing stream, which circles swiftly under the left bank, a fine bold rise tightened the line with a snap, and was followed by a dogged series of digs, as the salmon sailed deep and slow right up into the very neck of the strong water. He felt like something big; but all I had seen was half a yard of arched back when he rose—the rest was pure speculation of the sort which

experience comes so often to dispel. My fish spent the first five minutes marking time; not sulking, but dodging in a leisurely way among the submerged boulders at the foot of the foss, resisting all the strain I could put upon fine treble gut. Suddenly he changed his tactics: I could almost hear him exclaim in horror 'By Thor and Odin! this must be a hook.' Turning sharp, he fled past me, down, down, down, at great speed, to the very foot of the pool, whence turning again he dashed at a tangent to the far bank, and walloped on the surface. Still I could not make out his proportions, though the boatman muttered 'Big fish.'

Thus the battle wore on, so long that I hoped his force would not avail to let him seek another field; but the hope was vain. Several times in his rushes he had scoured round the very verge where the pool rolls out into a long rough rapid; a last excursion carried him over the verge, and down I felt he must go. Landing with all speed, I prepared for the crisis of the struggle. Fully a hundred yards of line were off the reel already, but I had taken the precaution to add enough backing to give me two hundred yards. Fast as I could follow over a waste of boulders, the current bore the fish still faster, and the line was running out by leaps and bounds. The extreme danger at this place consists in the nature of the channel. The bulk of water, leaping and tumbling in grand breakers, rushes down under the cliffs on the left bank. I was on the right bank, separated from my fish by a labyrinth of side-channels, winding among huge rocks. If the line could be lifted clear of all these, safety might be gained in the great pool of Langhol, a hundred yards below; but it is not easy so to handle a great

length of line. One hundred and fifty yards were out by this time; but I had got abreast of the fish, and the worst dangers were past. Deep was the sigh of relief I breathed as we reached the neck of Langhol and began recovering line. A rolling and kicking movement proclaimed that my communications had not been cut, and now all was plain sailing. 'Really,' methought, 'I managed that difficult passage rather nicely. There is some credit in killing a fish of this kind. It is not every duffer who——'

'WHAT'S THAT? what the deuce is *that*?'

The line had stopped. I tried to persuade myself it had not; there—I feel the fish! No, it was but the rush of the stream on the bight of the line. It had stopped, and no mistake, wrapped round a hateful boulder in the very portals of success. I pulled up—down—across—all to no purpose. Finally a boat had to be brought up, the line was freed, and wound sadly in, *minus* the fly and a yard of treble gut.

'What size do you put him at?' Oh, don't ask me! I saw nothing of him but the half-yard of back in the rise: he may have been as big as they make them; but, on the other hand, he may have been but an 18-pounder hooked foul. We only learned by meeting, that fish and I, how bitter it was to part (to one of us, at least); but the remembrance would be incomparably unbearable were I certain that he was a really big fish, for such chances come not every season to any angler—to many anglers not once in a lifetime.

What makes the tussle with a Norwegian salmon so much fiercer and longer than one in Scottish waters? Some will tell you that the nearer you approach the Pole,

the greater you will find the vigour of all *Salmonidæ*. Certainly this is borne out within the limits of our own little island, as those will testify who have compared the strength of a 2-lb. trout in a Hampshire stream with one of like weight hooked from the shore of a Highland loch. Have you nerve and delicacy of touch to control the first rush of the English fish? the rest is child's play; but the Highlander will fight hard to the last gasp. But the chief advantage enjoyed by the Norwegian salmon in his fight with man lies in the force of the stream. You can fish these clear Scandinavian torrents when they are in such spate as would render most Scottish rivers quite unfishable. Hook a log in such a stream, and you will realise that a big salmon has only to turn his side against the current to become nearly unmanageable. Your art consists in pulling him off his balance over and over again till he is beaten.

Rude must have been the schooling of the pioneers of salmon-angling in Norway. Frightful must have been the disasters encountered by him who first cast a fly in such a river as this, using a shallow, long-barrelled reel, such as Scrope depicts in his inimitable *Days and Nights of Tweed Fishing*; when trees grew thickly along the banks, and no friendly hand had as yet cast foot-bridges over yawning rock-chasms!

For salmon-fishing above other field-sports, one immense, one signal merit may be claimed—it inflicts no unnecessary suffering and leaves no sting of remorse. A salmon taken by the fly, wounded only in the gristle or membranes of the mouth, feels no more pain than one taken in a net—the pain inseparable from terror. If he escapes from the hook, or even with the hook, he is none

the worse, or at all events suffers no more than trifling discomfort. I possess to this day a certain double-hooked fly of which a salmon deprived me many, many years ago in the North Tyne. Two days later, a friend of mine, fishing half a mile higher up the river, proved how little inconvenience I had caused this fish by recovering my fly in the breast of a 17-pounder which he landed on a fly of much the same character. I attached my own fly at once to the line, and caught a couple of salmon with it on the same evening.

Other field-sports do not always leave the conscience cloudless. 'The place where the old horse died' is perhaps one of more than merely tender association. Well for you if you have not to reproach yourself with having exacted too much from your generous comrade and servant, who never measured his effort by his powers. Fine, too, are the trophies of the big-game hunter; but, in winning them, how many noble creatures has he dismissed to a lingering death in the wilderness. I have never had to lament the death of a horse under me; but in all my memories of moor and river, mountain and vale, there is none I care so little to revive as that of a certain afternoon on the steep above Loch Treig. We were stalking, on very difficult ground, a small herd of deer which got our wind and moved off before we were so near as we had wished. Among them were two good stags, one of which fell to my first barrel, apparently stone-dead; his comrade was heavily struck with the second. I felt some satisfaction with the performance, for they were both long-ish running shots; but just as I was starting in pursuit of the cripple, the first stag rose to his feet and began hobbling away in the opposite direction. Handing my

rifle to the stalker, I bade him go and finish off the second beast, while I kept watch upon the first. Donald took longer over the job than we had expected: he was absent more than an hour, during which time through my glass I watched the first stag, desperately wounded in the body, creeping along the hillside, lying down from time to time to ease his agony. At last he passed round the flank of the hill out of my sight. Still, I felt sure of getting him; and when at last Donald returned, his dog with alacrity took up the trail, which was marked, besides, with blood. How many miles we followed it, I cannot tell; but in the end a storm came on with thick mist, and we lost the trail altogether on a wind-swept waste of stones. This happened several seasons ago, yet still my heart aches when I shut my eyes and see that lonely beast on the great brown hillside, dismissed to a slow, solitary death. To the salmon-fisher can come no such bitter after-thoughts.

Of such sort are the meditations which pass through my mind in this Valley of Enchantment as I bask in the glorious sunshine between the early and late fishing. There is no sound, save the roar of the foss, never-ceasing for thousands of years, and the shrill scolding of a pair of fieldfares trying to drive off a marauding magpie from their brood among the alders. Of the lives of the simple, kindly folk who dwell in the wide-scattered wooden houses in this dale I have said no word, for how much can we realise of their lives, we holiday-makers, who come later than the cuckoo and fritillary and are gone before the goatsuckers? How do they pass those months of darkness when the snow piles deeper and deeper under the cold

stars? The men, it is said, go to the North Sea fishing, a dreadful toil which may well serve as their excuse for dawdling through the sweet o' the year. Substantial yeomen, many of them, they own land which might be better tilled. Especially do they neglect the pleasure and profit to be had from gardens. Here no carnations toss from window-boxes their perfume, so grateful to the traveller in the Alps; no roses cluster round the doors nor pansies in the plots. The culture of pot-herbs and small fruits is almost entirely neglected, albeit these grow abundantly and ripen fast under the long sunlit hours and refreshing showers, and would be eagerly bought by those English visitors who are at pains to import bottled pease and asparagus. Wild strawberries of exquisite flavour positively redden while you wait. There are plenty of wild bees, and good clover in the meadows, yet have I not seen a single beehive in Romsdal. The farmers seem to have no ambition beyond scratching up an annual break in amateurish fashion with rude wooden ploughs, drawn by the sleek khaki-coloured ponies which they treat so tenderly; but on some of these patches the corn does not promise to return more than the seed, with a little over for the poultry. Haymaking, indeed, is a more serious matter, begun, continued, and ended in feverish haste, before the sun deserts the dale. The grass is subjected to a kind of 'kippering' process on hurdles, but nobody seems to have suggested the application of the silo system, peculiarly adapted for dealing with abundant lush herbage.

Poor and hard although their lives may be, these sweet-tempered folk seem entirely contented with them as they are. It is difficult to realise that they are the children of

that race which, for three centuries, was chiefly dreaded by the people of Britain—of those restless, ruthless Vikings who cut the throats of Columba's monks, harried our coasts from Chichester to Caithness, from Chester to the Clyde, and drove with dripping swords and flaming brands through the Christian settlements of Ireland. In one virtue these modern Norsemen excel almost every other Christian race. Only among Mohammedans can be found such gentle consideration for, such affectionate treatment of, beasts of burden and of draught. The stages are often long and steep; but it adds vastly to the traveller's enjoyment that the mild, intelligent eyes of the good dun ponies, disfigured by no blinkers, are never strained in distress or terror. No blows, no sore backs, no harsh tones, disturb the perfect confidence between man and beast. Even the lazy ones respond generously to a cheering cry or a signal from the hand, and the high-spirited ones obey a warning that conveys no suggestion of rebuke. Chiefly this is owing to the good-nature and sweet-temper of the drivers and horse-owners; it may be left to speculation how far these qualities, here, as in Mohammedan lands, are owing to the absence of public-houses and the universal sobriety of the people. Certainly, fifty per cent. of the abuse of horses in our own country may be traced to bad liquor and too much of it.

One thing let me beg the angler bound for Norway not to forget. In these far-winding dales there are many children, but no sweet-shops. Let him therefore reserve an ample corner in his tackle-box for toothsome delicacies: he will find his reward in watching the effect upon palates which have never before experienced the exquisite sensation caused by chocolate and butter-scotch, and

every little gift of this nature will be acknowledged by a diminutive brown paw held out, not for more, but to shake hands in gratitude to the donor.

Adieu! terrible, beautiful Romsdal. Though I should never visit you again, often shall I see your towering crests, your mountain-walls, your hanging pine-woods, glimmering birch-glades, and flower-spangled meads—often hear your falling floods and roar of avalanche—often muse upon your gentle, warm-hearted people and solitary homes. Often, too, in my dreams shall I feel the masterful snatch of a great salmon at the fly, hear the screeching reel as he turns his silver side to the torrent, and fancy myself returning through the dewy glades at midnight, what time the woodcocks flit darkling to their favourite swamp.

August

XXVIII

Dittany

THE present craze for gardening, nurtured as it is upon much delightful, and perhaps more insipid, literature, is surely one of the most commendable of fashion's freaks. Long may it continue, and greatly may it grow. Meanwhile, it is rather amusing to one who melled in garden mould before some of the most eloquent authorities on the craft were born, and who remembers the first introduction to this country of herbs which are now reckoned among the old-fashioned flowers—it is rather amusing, I say, to be told as a novelty about some quality in one of the real old favourites. On the other hand, it sometimes happens that these experts are unacquainted with the behaviour of certain plants with which our grandmothers were quite familiar. One sees, for instance, in many gardens at the present day, a plant which twenty years ago was hardly to be found save in cottage plots. This is a dittany (*Dictamnus fraxinella*), which our forefathers named the burning bush. An unmeet name, one might suppose, to confer on a herb which, though graceful, boasts none but modest hues, and I have found that many who possess it are unaware of the significance of the title. This becomes apparent if, on some still, hot day, or, preferably, in the evening,

you apply a match to the flowering branches or quaint quadrangular seed-vessels. An inflammable gas given off by the plants at once blazes out with a slight explosion, leaving behind it a deliciously aromatic fragrance.

XXIX

The Death's-head Moth

He who fusses himself about natural history encounters some comical incidents. It was verging on midnight, and I fancied that all the household were in bed, when my butler, who lives at the lodge, appeared in the room carrying a box done up in brown paper, which he set down on the table with some signs of trepidation. 'This has just been left at the lodge,' said he; 'there is something alive in it, so I thought I had better bring it in at once.' Sure enough there was something alive, for a continuous noise—half click, half buzz, —proceeded from within. Or was it clockwork? Visions of infernal machines flitted through my mind, but, recollecting that my own importance was not on a scale to attract the malevolence of any anarchist, I cut the string and opened a chink of the box. A black head, with two hooked black horns, appeared in the orifice, and two substantial black claws. *Ex ungue leonem*—I recognised my nocturnal visitor as the death's-head moth—(*Acherontia atropos*), noblest of all the British hawk-moths. The clicking, buzzing noise went on, proceeding from the powerful wings, in rapid, tremulous motion.

Desiring to obtain a full view of the creature's funebral beauty, I opened the box a bit wider. He was out in a moment, dashing indignantly round the library, taking a couple of turns under the lamps, and then flinging him-

self violently on the carpet like a passionate child. Intending to release him out o' window, I tried to throw my handkerchief over him; but he mistrusted my motive, and took refuge under the sofa. Upon the said sofa was a crisp chintz cover, reaching to the floor; the noise the great moth made, flouncing about under it and rattling his wings against the chintz, was prodigious; the cunning creature seemed to enjoy the game, perching on the least accessible parts of the under side of the sofa, and dashing off again with an audible squeak each time my hand approached him. Really, we must have presented a very funny group—an elderly and, I hope, fairly respectable, country gentleman diving under the furniture at midnight, making frantic dashes in the uncertain light after an illusive object in black and gold. In the end I secured the animal, and, after causing him to gratify me by a few of his petulant squeals, I set him free in the darkness, hoping that he might find a mate and leave a numerous progeny behind.

Although *Acherontia* is certainly more frequent in appearance in Scotland than it was a quarter of a century ago, rare it must always remain in Britain by reason of the habits of the creature. The caterpillar, which is yellowish-green, beautifully banded with violet edged with yellow, is said to have been found feeding on jasmine, sweet-peas, elder, vegetable-marrow, and other plants, but its usual pasture is the foliage of the potato. Before entering the chrysalis stage it buries itself deep in the ground, and by far the larger number of pupæ must be disturbed and destroyed when the crop is lifted, or in the ordinary operations of agriculture which follow.

Truly, the perfect moth is an impressive insect, and it

is not difficult to understand the superstitious dread wherewith it used to be regarded by country people, and despite Board Schools, perhaps still is. It is not everybody, even in these enlightened days, who will care to take in his naked hand a winged creature as big as a small bat (the death's-head sometimes measures six inches from tip to tip of the wings), marked on its back with the accredited emblem of mortality, and wearing a funebral livery of steely black and dusky brown, slashed and barred with flame colour. Moreover, the faculty possessed by this moth of giving audible expression to irritation imparts a shock to untrained nerves, and the captor's instinct is to fling the creature away.

XXX

The Voice of Atropos

Naturalists are not agreed about the mechanism producing the sound which the insect is able to utter as a caterpillar and a chrysalis, as well as a perfect moth. Most of them assign the sound as a function of the blunt proboscis protruding between the two great eyes, which have been calculated to contain upward of 12,000 lenses. But about the object of the sound there is greater difference of opinion. Some consider that it serves as a love-call between the sexes; but then the caterpillars can utter it, albeit their mouths are always full, and a caterpillar that understands his or her business, has no time for ogling or flirting, only for eating. If it is intended for conversation, then one would say that a caterpillar's small talk must be the reverse of entertaining, consisting almost exclusively of remarks upon the quality of the potato crop. Besides, these great

worms are not gregarious; if they were so, there would be precious little profit to farmers in growing potatoes. One caterpillar can seldom be within earshot of another, and it takes two to make a conversation or a quarrel. No; without denying that *Acherontia* may be gifted in this peculiar way for purposes of communication with his own kind, I cannot help thinking that the faculty is mainly protective. It adds to the uncanny character of the creature, inducing possible aggressors to give it a wide berth, and serving a like purpose to the curious horn which the caterpillars of all the *Sphingidæ*, or hawk-moths, whereof the death's-head is the chief, bear on their posterior extremity. This horn, absolutely futile as a weapon of offence, looks like one, and thus serves as an instrument of defence.

Doubtless there be many sounds uttered by humble creatures inaudible to human ears, but easily heard by other animals. Many people cannot hear the squeak of a bat; there is no chord in their cochlea which responds to such a high note. A friend of mine, quick in hearing ordinary sounds, sits quite unconscious though the air resounds with the incessant chirping of cicadas, and he cannot hear the call of a partridge. I have a hazy recollection of one of Grimm's fairy-tales, in which a boy is described as being suddenly endowed with the power of hearing and understanding the language of all living creatures. If I remember right, he found the conversation in an ant-hill peculiarly intellectual. Even so; every flying, creeping, or swimming thing might have its message for us had we but ears to hear. The hearing of few persons is so gross as to miss the accents of the death's-head moth: as to the meaning thereof, I have an

impression that it is something of the nature of Lord Melbourne's favourite exclamation—prefaced too, like his, with an exceedingly forcible monosyllable: 'Damn it! why can't ye leave me alone?'

I regret very much that, before releasing the subject of this long prose, I did not test the insect in respect of another property which it is said to share with some other hawk-moths—namely, that of emitting an agreeable perfume like musk or jasmine. This, most probably, is intended for the delectation or attraction of the opposite sex; just as it is well known men burn tobacco only because women like the smell.

Since jotting down the above speculation upon minute sound vibrations I have become possessed of a little instrument, the Galton whistle, devised for testing the power of perceiving very high notes. A movable index, showing in millimetres the number of sound vibrations per second, indicates every alteration in the height of the note. Personally, I prove insensible to anything above 12,000 vibrations per second, but I found two young ladies who could receive the impression of a note caused by 40,000 vibrations. What a lot some people miss, and yet never miss!

September

XXXI

A Scottish Blood-feud

You may throw open your bedroom window, and if you are so material as to indulge in a morning cup of tea, you can fling the biscuit which accompanies it two hundred feet down into the blue sea, for it flows round three sides of the rock on which this fairy castle stands. It is a modern one, having been built some hundred and twenty years ago by one Adam of whom we wot, whose genius, it must be confessed, lay rather in classical or Palladian piles than in this mimic Gothic. Yet is Culzean Castle an impressive mass of masonry, in spite of the many large rectangular windows, and has been invested with a military character by a former Lord of Ailsa, who, impressed with the imminence of foreign invasion, set about creating bastions and earth-works on a formidable scale. The entrance-hall reminds one of the armoury of the Tower of London; a thousand stand of arms, of an archaic type it is true, but carefully oiled and burnished, garnish its walls; brass carronades defend the circular staircase, and outside, on the terraces, pieces of heavier calibre grin defiance across the Firth. It is said that the designer of these defences, the first Marquess, took grave umbrage at a relative in the Navy who offered to wager that he would capture the castle on

any given night with a dozen gamekeepers armed with dog-whips.

Nevertheless Culzean (you must pronounce it Cullàne, please, with the stress on the last syllable) was well placed as a stronghold in the days when artillery was more remarkable for terrific nomenclature than for strength or precision in shooting. The castle stands on a bold headland of the coast of Ayrshire; its walls are built to the very verge of a precipitous crag, and the waves roll in upon three sides of it. The landward access is interrupted by a deep ravine, across which the roadway is carried level on a causeway of masonry, while the chasm itself is formed into terraces and flower gardens.

From the windows there is a noble prospect seaward. The long line of Cantyre bounds the western horizon; on the north the fantastic outline of Arran, with many loops and crests, ends abruptly in the beehive mound of Lamlash; and towards the south, beyond where Turnberry lighthouse marks the birthplace of Robert the Bruce, the granite dome of Ailsa heaves itself in mid-channel, interrupting the fainter blue contour of the coast of Ulster. And lest one should weary of vacancy in the middle distance, there is the never-ending procession of ships, outward or homeward bound, which the great Sidon of the north, Glasgow, and the lesser ports of the Clyde attract to these waters; the gannets for ever wheel and plunge, and the sea-parrots and razor-bills hurry along the wave-tops in little dark-clad companies.

One may turn from the rampart of the wild coast, and, passing a couple of hundred yards inland, find himself among great trees; for, by a peculiar ground contour, the park is sheltered from Atlantic gales, and hardly

anywhere else can such fine timber be found so near an exposed seaboard. Silver firs, with a girth of fifteen feet at five feet from the ground, run up to a height of one hundred and twenty feet—a long start over some of the newer Californian species, which, however, are making a good stern chase of it—while oak and beech and other deciduous trees furnish greenwood glades like those of Berkshire, yet within sound of the thunder of the tide.

The terraces are rich with those flowers and shrubs which revel in the moist warmth of the west coast, and the walls are thickly clothed with myrtles, camellia, lemon-verbena, fuchsia, and escallonia—a garniture not more strangely in contrast with the warlike armament of the place than social life of this day is at variance with the times recalled by the name of Kennedy in the south-west of Scotland. For this castle of Culzean, at one time but the tower of a scion of that family, has been for two centuries the principal seat of a race whose sway was at one time far more dreaded in Carrick and Western Galloway than that of the monarch himself. One has only to turn to the records of the Kennedys, Lords of Cassilis, to realise through what troubles the people of Scotland have passed to present security.

The family of Kennedy, like many other great Scottish houses, first came into prominence when Robert Bruce established himself on the throne and rewarded with broad lands and feudal rank those who had been faithful to his cause. Unlike most of these, the Kennedys were not of Norman descent, but of Celtic blood, descendants of the Pictish or Scottish Cinaedh. Nevertheless, this honourable outset might not have availed to preserve a heritage to the name, for royal favour of old was as

fickle as popular applause nowadays, and there is to be observed this difference in the loss of the two—beaten in a general election, a modern minister may amuse himself unmolested in private life by the study of anything, from Homer to hymenoptera; but the monarch's displeasure was generally the passport to a dungeon and the heading hill, accompanied by forfeiture of titles and land. The ban lay upon the children to the third and fourth generation.

The age of the early Jameses was one that witnessed the reversal of many a fair fortune, but Dan Cupid came timeously to the aid of the Kennedys. To the second Lord Kennedy his wife bore a beautiful daughter, Janet, who was to have a notable influence on the history of her time. She was betrothed to Archibald 'Bell-the-Cat,' Earl of Angus, with whom to trifle required a cool head and a stout heart. The girl seems to have been wanting in neither; for, although matters went so far that Angus, in terms of great affection, actually made over to her the lands of Braidwood and Crawford-Lindsay, she continued to receive the addresses of that flower of chivalry King James the Fourth, and became his mistress. He was, it will be remembered, an exceedingly devout individual, and in his minutely detailed personal accounts articles for the use of 'the lady,' as the fair Janet is decorously called, appear side by side with expenses on pilgrimages to St. Ninian's shrine and other religious exercises, as well as those incurred at golf and 'the tables.'

She bore a son to the king; thus in 1501-2 is noted in the royal accounts:—

'*Item.*—y^e^ xx day of December for viii elne small quhit (white) to be blancatis and wylycottis (petticoats) to y^e^ barne (child) in Doun, ilk elne iis. viii*d.*, summa xxiis. viii*d.*'

The child thus born in Doun Castle became James, Earl of Moray, and his mother was splendidly endowed by her royal paramour with the lands and castle of Darnaway. The ethics of this transaction will not bear very close analysis, perhaps, but here comes the least creditable part of it. The king quietly annexed the lands of Crawford-Lindsay, the gift of Bell-the-Cat to his betrothed, on the plea that they had been conveyed without the royal licence, and when the proud Douglas presumed to claim the hand of his bride he was promptly clapped into prison in Dunbarton Castle. That, at least, is the only reason that can be surmised for his sudden imprisonment at this time.

Now the bearing of all this on the fortunes of the house of Kennedy is not difficult to trace. David, the brother of Janet, was created first Earl of Cassilis, and, like almost every other man of note in Scotland, fell with his king on Flodden Field.

Even misfortunes seem to serve the interests of fortune's favourites. In 1527, Gilbert, the second earl, was waylaid on the sands of Prestwick and slain by Hugh Campbell of Loudoun, Sheriff of Ayr. In atonement for this murder Campbell's lands were forfeited and bestowed upon Gilbert, the third earl: thus extending and strengthening the influence of a family already very powerful.

But it was in the person of Gilbert, the fourth earl, that the power of this puissant house culminated. The extent of his lands and fiefs was succinctly described in a popular rhyme of the day.

> 'Twixt Wigtoun and the toun o' Ayr
> Portpatrick and the Cruives o' Cree,
> Nae man need think for to byde there
> Unless he ride wi' Kennedy.'

He was a trusted councillor of Mary Queen of Scots, and was present with her at the battle of Langside. There are preserved in the Culzean charter-room many interesting letters to him from the queen, written by an amanuensis, but signed by herself, and sometimes an autograph postscript was added. It is rather interesting to note how much more fluently the queen wrote in French than in English; indeed, her spelling in the latter language exceeds even the liberal latitude of orthography in the sixteenth century.

'Ze schal be asuried (she wrote in 1568) that I schal be as kerful off zour weil and of zour hous as zou shal wuische mi, as ze shal hir by zour awn man wuam tu I hef spokne my mynd.'

And again in the same year:

'ie vous prie en labsance de mi lord boyd, que ie retiens pour vn temps pour mon seruise, suporter et meintenir son fils & serviteurs en leur actions. Mi lord heris (Herries) vous informera de lestat de mes affayres; ie vous pri aussi vser de son bon conseil comme celui qui scet lestast des choses issi.'

But this 'richt gud cusigne and trustye frind,' as Mary was wont to call him, sometimes played a *rôle* less amiable than the champion of beauty in distress, and of the extraordinary proceedings in which he bore a leading part a minute chronicle by a contemporary but anonymous writer has been preserved.[1] This has been carefully edited by Mr. Robert Pitcairn, who said that at one time he believed it to have been the work of Mure of Auchendrayne when confined in the Tolbooth of Edinburgh, awaiting his trial for the series of atrocious crimes

[1] *Historie of the Kennedyis*, with notes, etc., by Robert Pitcairn. Edinburgh, 1830.

which Sir Walter Scott embodied in 'Auchendrane, or the Ayrshire Tragedy.' Certain it is that this narrative was composed by one who took an active and interested part in the events described; that he is able, or professes to be able, to repeat what was said in most secret conferences, and that the manuscript comes to an abrupt end at the very time when the Mures were arraigned on the charge of murder. It is known that Mure, unlike most Scottish lairds of that day, was an accomplished scholar, having composed a history of Scotland, which remains in manuscript in the Advocates' Library, Edinburgh, but it might be supposed that, were he indeed the author of the *Historie of the Kennedyis*, he had drawn on his imagination for the details of almost incredible violence which marked the course of family feuds in Ayrshire three hundred years ago. There is, however, ample confirmation to be found in the Records of the Court of Justiciary, and the interest of this vivid though anonymous history consists in the fact that it was written by an eye-witness of the closing scenes of feudalism in Scotland, and, if Mure was the real author, by one who was blood-stained more deeply than any of his fellows.

The first letting-out of waters seems to have been the treatment by this Gilbert, Earl of Cassilis, of Allan Stewart, Commendator of the Abbey of Crossraguel. The office of commendator was created on the secularisation of Church property at the Scottish Reformation, and was held by a layman appointed by the crown. Cassilis obtained this appointment from his uncle, Quentin Kennedy, the last Abbot of Crossraguel; but this was

not confirmed by the king, who appointed Stewart commendator. Cassilis, whom men called the King of Carrick, was not of the temper to brook this sort of thing. 'He was,' runs the *Historie*,

'ane particuler manne, and ane werry greidy manne, and cairitt nocht how he gatt land, sa that he culd cum be the samein, and thinking himself gritter than ony king in these quarteris, determined to have the whole benifice.'

So, having first tried soft means to obtain from Stewart the surrender of the Abbey lands, and failed, he had recourse to cruelty of a blood-curdling sort.

To read the story aright, with all its horrible reality, one should follow the unhappy commendator's own words, as set forth in his supplication to the Privy Council; but it is lengthy, and the gist of it is that the earl carried his victim to the 'black vault' in Dunure, one of his many castles, and there caused the cook, the pantryman, and one Sir Thomas Tode, who, it is shrewdly suspected, was none other than his domestic chaplain, to strip Stewart, tie him to a spit, and deliberately roast him into compliance before a huge fire. Richard Bannatyne, in his *Memoriales*, gives a vivid description of the scene:

'And that the rost suld not burne, but that it might rost in soppe, they spared not flambing with oyle (Lord luik thou to sic crueltie!). . . . In that torment they held the poore man, whill that oftymes he cryed for Godis saik to dispatche him; for he had alsmeikle gold in his awin purse as wald bye poulder (gunpowder) aneugh to schorten his paine.'

At last, in sheer agony, Stewart consented to sign the

renunciation of the lands. This took place on the 1st of September 1570. Apparently Cassilis found a flaw in the conveyance, for on the 7th of the same month he brought another paper for signature by the miserable commendator, who boldly replied that he would rather die than obey. On this the ferocious monster ordered the fire to be rekindled and the torture repeated.

'Then,' runs Stewart's supplication,

'being in so grit paine, as I truste never man was in. . . . I cried, "Fye vpon you! will ye ding whingaris (drive swords) in me and put me out of this world? or elis put a barrell of poulder vnder me, rather nor to be demaned (treated) in this vnmercifull maner?" The said Erle, hearing me cry, bade his servant Alexander Ritchard put ane serviat (napkin) in my throat, which he obeyed . . . wha then seing that I was in danger of my life, my flesch consumed and brunt to the bones, and that I wald not condescend to thair purpose, I was releivit of that paine: whairthrow I will never be able nor weill in my lifetime.'

The Privy Council could not refuse to administer justice in such a heinous case, even against such a powerful subject as Cassilis, and he was punished by being ordered to find security for £2000 Scots (about £100 sterling) to keep the peace towards the half-roasted commendator, who, as the chronicler testifies, 'was ewer theirafter onabill of his leggis.' They would have been more than mortal 'leggis' had it been otherwise.

Thus the criminal may be held to have got off cheap; but there was retribution in store, though not for himself (seeing that he died five years later, before events had developed themselves), but for his posterity, who were to see their great house rent by faction and deprived of its despotic sway. Certain powerful lairds of the clan and

name, were disgusted with their chief's brutality in this affair. Kennedy, laird of Bargany, espoused the commendator's cause, stormed the house of Dunure, and bore off Stewart, 'brunt as he was,' to Ayr. Thereupon broke out a feud between the two branches of the Kennedys, so bloody and so long-continued as if the whole fury of expiring feudalism had concentrated itself in this corner of Scotland. It is brought very near to these our times by the observation that the laird of Bargany's 'neise was laich (nose flattened) be ane straik of ane goiff ball on the hills of Air in reklesnes.' They were strong drivers, it would seem, the golfers of Queen Mary's reign, and they played not with a plain 'gutty' or Haskell ball, but with one made of wood.

Bargany had such a strong force of his own in Carrick, besides contingents of his friends from Kyle and Cuningham, that he was able to bid defiance to his chief, and eventually the earl, who was probably thoroughly ashamed of himself, consented to allow the commendator a handsome pension for life. The chronicler makes use of a curiously modern bit of slang in bringing his account of this transaction to a close. 'And this way,' he says, 'wes my Lordis conqueise of Corsragall; *quhilk wes bot ane bad forme.*'

The 'King of Carrick' came to a violent death not long after this peace had been patched up, for in riding to Edinburgh his horse fell, and he died of his injuries. He left Lord Glamis, Lord Chancellor of Scotland, as tutor or guardian to his son and heir, the fifth earl; and herein was matter for rekindling the flames of feud, which were presently roaring more fiercely than ever. For the uncle of the young earl, Sir Thomas Kennedy of Culzean,

brother of the late 'King of Carrick,' took grievous offence at not being appointed guardian. There was, indeed, good cause why he should not be chosen for that trust, seeing that some years before he had brought a company under cloud of night and fusilladed the house of Dunure, intending that this should be deemed an assault by the laird of Carse, with whom the earl was at feud. Cassilis, however, was duly informed how it was his own brother who had done this, and also how the benevolent intention was to cause his countess, at that time *enceinte*, to miscarry, in order, of course, to secure the succession to Sir Thomas.

Lord Glamis found his office of guardian no sinecure, for, on arriving in Ayrshire to take up his duties, the lairds of Culzean and Bargany took up arms against him. Thereafter, having to attend a convention of peers at Stirling, Lord Glamis was slain by the Earl of Crawford's men, the shot, it was alleged, coming from the laird of Bargany's stair. This cleared the path for Sir Thomas, the laird of Culzean, who immediately assumed authority over the ward.

There are so many side currents of feud, involving slaughter and raids between Kennedys, Crawfords of Carse, Gordons of Lochinvar, Macdowalls of Garthland, and other families, that it is difficult to keep to the main conflict which, arising from a dispute about land, now broke out between the lairds of Bargany and Culzean. In order to obtain a clear impression of the state of parties in 1596, it is necessary to marshal the chief combatants on paper as on more than one occasion they met on the field of battle.

THE EARL'S SIDE.	THE MASTER'S SIDE.
John, fifth Earl of Cassilis.	Hew, Master of Cassilis (the Earl's brother).
Sir Thomas Kennedy of Culzean.	Kennedy, Laird of Bargany.
Baird, Laird of Kilquhenzie.	Thomas Kennedy of Drummurchie (Bargany's brother).
Cuningham, Laird of Pochquharne.	Kennedy, Laird of Girvanmains.
McIwean, Laird of Gremmat.	Kennedy, Laird of Blairquhan.
	Kennedy, Laird of Bennan.
	Kennedy, Laird of Knockdaw.
	Mure, Laird of Cloncaird.
	Mure, Laird of Auchendrayne.
	Stewart, Lord Ochiltree.
	Stewart, Laird of Dunduff.
	Cathcart, Laird of Carleton.

The old laird of Bargany died just as the war was breaking out. He was a fine old Scottish cavalier, and 'had ewer in his houshald xxiiij galland gentilmenne, doubill horssitt and gallantly cled with sik ane repair [so many guests] to his house that it was ane wonder quhair the samin wes gottin that he spendit.' His mantle fell upon a fine young man, his son, who entered upon the feud with spirit.

On New Year's Day, 1597, Mure of Auchendrayne and Stewart of Dunduff led their followers to attack Culzean as he was leaving Sir Thomas Nesbitt's house, where he had supped. Culzean escaped, the 'nycht being mirk,' and prosecuted his assailants before the Privy Council. Mure and Stewart were declared outlaws, and Culzean, getting possession of Auchendrayne tower, dismantled it. Fresh fuel to the fire! for Mure and Stewart had henceforward but one object—to compass the death of Culzean.

Affairs were getting so serious in Ayrshire that King

James summoned the Earl of Cassilis and the laird of Bargany to his presence and

'gart thame schaik handis; and also the laird of Colzeone in sum missour: bot not with thair hairttis, because thair particular wes not sett doun at the agreanse [agreement].'

This ceremony was without the slightest effect, as was straightway seen. The Earl of Cassilis, at the request of Culzean, had let a farm to one McEwen, which farm the Master of Cassilis had previously promised to his foster-brother, Patrick Richard. The master sent over to the farm and told the new tenant to clear out, which he, being 'ane prowd cairll,' flatly refused to do, on which the master set out and slew him with his own hand. The earl was not in a posture to avenge this outrage at the moment, being closely besieged in his house of Inch in Wigtonshire by his Galloway vassals, with whom he had fallen at grave issue. However, bitter as was young Bargany's personal feud with the earl, he was not going to sit idle while his chief was beset by a parcel of Galloway lairds. He led his men to the rescue, and by skilful diplomacy, backed by a display of force, induced the gentlemen of Galloway to raise the siege. The earl was eloquently grateful, and profuse in promises of the favours he intended to shower upon Bargany when he got back to Ayrshire. Matters having been amicably arranged,

'my Lord drew on his bwittis [boots] and raid with the Laird to Ardstinchar, being convoyit be the Galloway menne to Glenapp, quhair the Laird of Barganyis frendis and seruandis mett him.'

He was hospitably entertained that night by Bargany in his house of Ardstinchar; but ten or twelve days after, when the laird called on him to fulfil some of his pro-

mises, 'me lord,' being under the influence of Culzean, 'geff na ansuer, bot lat the samin pass ouer with sylense.'

And so ended this strange and brief armistice, and the laird of Bargany set about equipping and drilling his forces. It was harvest-time, and the earl and the laird both claimed the teinds—that is, the tithe crop—on the lands of Girvanmains. Bargany was first on the ground, with no fewer than seven hundred horsemen (including one hundred of Lord Ochiltree's) and two hundred musketeers. Cassilis arrived soon after, with nearly a thousand men; but, finding his adversary strongly posted, declined battle.

He must have been *preux chevalier*, this lawless laird of Bargany, and the chronicler waxes enthusiastic in describing him:

'He was the brawest manne that was to be gottin in ony land; of hiche statour and weill maid; his hair blak, bott of ane cumlie face; the brawest horsmanne and the ebest [champion] of mony at all pastymis, for he was feirse and feirry [sturdy] and winder nembill.'

All these fine qualities did not prevent him engaging in a detestable plot with the laird of Blairquhan to take Culzean's life, for whom they laid an ambush in Glentressock to intercept him on a journey to Galloway. Auchendrayne, however, who was in Bargany's confidence, warned Culzean of what was in store for him, and Culzean sent forward his squire, Lancelot, to spring the ambush. Lancelot was taken prisoner, and Culzean appealed for protection to the king; the misdemeanants were sent for, and the old farce was repeated: 'the King gart thaim drink togidder and schaik handis.'

Matters might have gone on simmering for a long time

but for Bargany's listening to the laird of Blairquhan's evil counsel. It happened on a day that Lady Bargany and her sister were riding, with a small following, into Ayr. The earl spied the party, and, recognising their white-and-red liveries, sent a clump of twenty spears to reconnoitre them. Bargany himself not being there, the party was suffered to proceed unmolested. The incident was not lost on Blairquhan, who hied to Bargany, and, assuring him that it had been the earl's intention to have his life, finished by taunting him with cowardice in not giving him, Blairquhan, leave to put an end to the trouble at once. 'How could you do that?' asked Bargany. 'To-morrow,' whispered the tempter, 'he is to ride to Maybole from Craigneill, and on his return we may all do as we please.' 'Even as you please,' quoth Bargany, shrugging his shoulders and turning away from his kinsman.

Blairquhan was not slow to act on the permission. An ambuscade was prepared by the wayside, and holes were cut in the hedge 'to schutt me lord in the by-ganging.' But even as the ambush laid for Culzean had miscarried, so did this one, by timely warning conveyed to the intended victim.

The time had come for Cassilis to act in earnest, for it was clear that the same country would not contain him and his kinsman, Bargany. One snowy morning in December 1601, Bargany having been for some days in Ayr on business, with a small following of a dozen spears, the earl determined to attack him on his return, and to that end assembled a body of two hundred horse and pike-men, with twenty musketeers, at Maybole. Auchendrayne, who seems to have been constantly in the confidence of both parties, galloped to Ayr and warned Bargany of what was

in store for him. He begged him to remain in the town, 'for,' said he, 'your friends are not with you, and you have to do with men this day. I take God to witness, that if you ride forward, I have no will for this day's work, for I see not the men who will do your turn.'

The gallant young laird (he was but five-and-twenty years of age) laughed scornfully, and persisted in setting out, having first, however, collected reinforcements among his adherents in Ayr. Halting the party on the Brig of Doun, he addressed them thus: 'Sirs, I am here to protest before God that I seek not the blood of my lord, nor his dishonour in any sort. I shall ride home to my own house, if he will let me; but if he molest me, I trust you will all do your duties, as behoves men. He that is unwilling to do this for love and kindness to me, let him declare that he will see me through it, or turn back at once.' They all declared their readiness to die in his defence, and the troop moved on in two companies, one led by Bargany, the other by Cathcart, the young laird of Carleton. It was a severe storm; the snow was falling so fast that 'nane cud seine the lenthe of ane lanse befoir him.' But as they neared Maybole the sky lightened a little, and they beheld the enemy, a dark mass against the white ground, defiling out of the town gate and drawing up across the road before the Lady Cross.

The men of Ayr deployed, and began blowing their matches, but Bargany would not allow them to begin the fight. 'I will nocht persew me lord,' said he, 'bot I will eschew all cummer, alse far as I may.' In order to 'eschew cummer' it behoved him to leave the highway, and this he did, seeking to make his way home through some boggy meadows, without entering the town of Maybole.

Lord Cassilis gave the word to his men to attack Bargany's force in flank: his musketeers and mounted hackbut-men dashed down the hill, lined the turf dykes, and opened fire. Bargany rode foremost, with six other gentlemen, but in crossing a stream Knockdaw's horse was shot under him, the bridle was shot out of the hand of Bargany's brother, Drummurchie, who fell, dislocating his shoulder. Three other lairds and a page, Edward Irving, rode on with Bargany, but the men of Ayr turned and fled.

'Good God!' exclaimed Bargany, 'we are too few'; and, drawing rein, these five turned and charged the earl's cavalry, lances in rest, 'in sik sortt as the young laird of Grinak [Gremmat] was strukin throw the chin, and he and horse baith strukin to the eird [earth], and Row Cuninghame, Pochquhairnis broder, was strukin in at the knie with ane lanse and out at the buttok.' Cassilis's major-domo was killed outright.

Bargany was frightfully outnumbered. His page had been killed, Auchendrayne lay grievously wounded in the snow, two others of his five followers were unhorsed, yet he fought on, crying 'Where is my lord himself? Let him keep his promise and break a tree with me.' They were his last words; for while he was engaged with two spearmen in front, a third, 'ane fellow callitt Johne Dik,' thrust a lance into his throat, severing the windpipe.

They carried this gallant young gentleman to a barn hard by, to which the earl rode up intending, it is said, to finish him; but those with him persuaded him to let him die of his wound, or, if he recovered, to put him judicially to death, he (Cassilis) being Judge-Ordinary of the County. Bargany lived some days: his wound was so swelled with the frost that the true nature of it could

not be ascertained till he was taken to Ayr, where, aided by the chirurgery of 'Doctour Low,' he breathed his last. It is clear that Cassilis was the assailant in this fray, and that Bargany tried to avoid the encounter: nevertheless the earl can hardly be blamed if, according to all the rules of warfare, he chose his own time to attack a hostile force threatening his territory. Anyhow, he escaped punishment on the plea that he was doing the king service, seeing that Thomas Kennedy, who rode with his brother, Bargany, on that fatal day, was an outlaw at the time. It might have followed that, his principal enemy being laid low, the earl might have resumed peaceful sway over his dominions, had not a deadly quarrel ensued between him and his lieutenant, Sir Thomas of Culzean, about an appointment made by the former to the Provostship of Maybole College. Sir Thomas was assured by the omnipresent Auchendrayne that he went in danger of his life, at least so says our anonymous chronicler; but if the authorship of the *Historie* be justly suspected to be Auchendrayne's own, then, as will be seen, there is good reason to doubt this statement.

Howbeit, what was subsequently established on oath is this: that on the 11th of May, 1602, Culzean sent his squire, Lancelot, to find Auchendrayne in Maybole, inform him that he, Culzean, was to set out for Edinburgh next day, and desire him to meet him for a conference at the Duppil near Ayr, as he should pass that way. Mure had left Maybole before Lancelot's arrival, so Lancelot got the schoolmaster to embody the message in a letter, which was sent to Mure at his own house of Auchendrayne, distant some six or seven miles, by the hand of 'ane

puir schollar, quha beggit his leirning, callit William Dalrumpill.' The lad returned with the letter, and declared that Mure was away from home. The importance of getting at the true history of this letter will be seen hereafter; meanwhile we may accept the chronicler's statement of what preceded the events of the 12th of May. Culzean had sent word to Hew Kennedy of Chapel to meet him at Auchendrayne, which lies on the high road to Edinburgh, about four miles south of Ayr. This Hew acquainted Mure of Cloncaird and Thomas Wallace, sworn foes of Culzean, of Culzean's coming, and they sent for Drummurchie. Assuredly our chronicler was also with them, for he inadvertently says 'quhatt wordis was amangis thame, I will not repeitt itt.' Culzean did not tarry, it would appear, at Auchendrayne, but rode on to Greenan Castle, now a conspicuous ruin on the sea-cliff south of Ayr. He remained there a space in conference with Kennedy of Baltersan, and then resumed his journey. Apparently he had taken no heed to Auchendrayne's warning, if indeed he ever received it, for he rode 'ane small haiknay,' and Lancelot Kennedy was his only companion. As he was passing St. Leonard's Chapel, which stood upon what is now the south-west corner of Ayr race-course, he was set upon by Drummurchie, Cloncaird, and four others, and done to death among the sandhills. Obviously, the motive was revenge for Bargany's death, and there is not the remotest suspicion attaching to the Earl of Cassilis, though he happened to be at the time in feud with his old ally, Sir Thomas.

Mure of Auchendrayne's hand was in this affair, as was subsequently proved, though he was not one of the actual

assassins, and we seem to read his sentiments in the cold reference to the dead man's character:

'He was ane werry potenteous man, and werry wyise . . . be ane moyane and wther [by one means and another] had conquessit ane gude leiwing [amassed a good fortune].'

The immediate effect of this murder was the reconciliation of Cassilis and his brother, the master, who united their efforts to bring the assassins to justice. To do this, however, took some years, while the hounds were puzzling over a false scent, and there were stirring deeds enacted after the old sort, enough to make men slow to go abroad without their harness. It is almost incredible that, in a district so well settled and cultivated as that lying round the town of Ayr, a miscreant like Thomas Kennedy of Drummurchie, who had been an outlaw for years, should have been able to maintain himself at large. But so it was; and one evening in May 1602 the Countess of Cassilis was returning from Galloway, escorted by the master and a retinue of fifteen horsemen, when they suddenly found themselves confronted with a body of nine horsemen and twenty-four musketeers, led by Drummurchie. Among the countess's men rode John Dick, who had slain Bargany, and his life Drummurchie was resolved to have. Seeing that his party was outnumbered, the master seized the bridle of Lady Cassilis's horse, and, giving the word to his men, galloped off to Auchensoul, a small house belonging to one Crauford. Drummurchie's party, consisting chiefly of infantry, were slow in pursuit but sure, for they surrounded the house and set it on fire. Thereupon a parley ensued. Drummurchie's conditions being the surrender of John Dick, that worthy wisely took the hint and escaped under

cover of the smoke from the burning thatch. Only one man of Lady Cassilis's following was killed, she herself was released, and afterwards, at the intercession of the wives of the country gentlemen of Ayr, with whom Drummurchie was on the best of personal terms, the master and the other prisoners were also set at liberty after some days' confinement.

A grisly episode is here recorded, wherein a member of a family shortly to become famous came to a violent end. Thomas Dalrymple, brother of the laird of Stair, had been one of Bargany's men at the battle of Maybole, and Cassilis had obtained letters of horning [outlawry] against all his opponents in that affair. Him the earl, as he was riding to Galloway, met by accident on the bridge of Girvan, seized, and hung him on the dule tree 'besyd the yett [gate] of Craigneill.' The chronicler feelingly observes that he was 'ane pretty little manne, and werry kynd. He was ane manne that had never offendit manne.' It was unwise of him to go about unattended; and doubtless a similar fate would have overtaken the other adherents of Bargany had they laid aside their arms and dismissed their attendants.

The usual consequence was not lacking. To avenge Dalrymple, Mure of Cloncaird rode to Cassilis's house of the Inch[1] in Galloway, and there slew his lordship's master of the works.

Drummurchie was now persuaded by the lady of Bargany and others that the country was too hot to hold him, so he went to France, and thence to Ireland, 'quhair he was wondir weill interteynit, and sindry of thais that wes at the slachter of Culzean.' The men who

[1] Now Lochinch, the seat of the Earl of Stair.

had served Drummurchie so faithfully took his desertion of them terribly to heart, especially Cloncaird, who 'tuik sik heaffie malancolly' that he died thereof.

Before coming to the closing scene of this long story of horrors, notice must be taken of one feature in the magnificent obsequies which, at this time, five years after the death of Bargany, were performed in honour of him and his lady, she having lately died. It was a great feudal demonstration, whereat the partisans of Bargany mustered in force; the special feature referred to being the Banner of Revenge, borne in the procession through the country, from Bargany to Ayr, some twenty miles, by young Mure of Auchendrayne, whereon was painted the likeness of the late laird, with his son sitting at his knees, and the legend 'JUDGE AND REWENDGE MY CAUS, O LORD!' One would give something handsome for this relic now.

All this time ugly stories had been afloat about the elder and younger Mures of Auchendrayne, whereby their names were brought into sinister connection with the murder of Sir Thomas Kennedy of Culzean. The affair of the letter informing Auchendrayne of Culzean's journey to Edinburgh became of momentous importance. This letter, it appeared, which Mure had been supposed never to have received, had been duly delivered into his own hands and read by him. He had then closed it up again and given it back to the boy, charging him to return with it to Maybole, and to declare to the schoolmaster and Culzean's messenger that he had been unable to find him to whom it was addressed. He had then sent to Drummurchie and showed him how Culzean might be waylaid on the morrow and Bargany's death avenged.

After the deed was done, Auchendrayne realised that his safety lay in the silence of the lad Dalrymple; he therefore had him kidnapped, and shut him up in Auchendrayne tower for nine or ten weeks. Thence he sent him to a friend in Arran, the laird of Skelmorlie; but the boy, being treated with harshness there, made his escape back to Ayrshire, where Auchendrayne captured him once more, and, after some further weeks of imprisonment, took him to Leith and shipped him off as a recruit for the regiment of Sir Walter Scott of Buccleuch, devoutly trusting, no doubt, that he would there be knocked on the head. All this, of course, was a device to conceal the fact that Culzean's intended journey to Edinburgh had been made known to Auchendrayne.

Nothing was heard of Dalrymple for some years, when, to Mure's horror, he reappeared in Ayr at his mother's house, and straightway came to ask employment from him. Young Mure, who had been as deeply concerned in the plot against Culzean as his father, was called into counsel, and this worthy pair were of one mind that Dalrymple must be silenced for ever. On some pretence or other they induced him to accompany them to Girvan, where he was lodged with Auchendrayne's tenant, James Bannatyne, in Chapeldonald. It was a light matter in those days for a laird to exact service from a tenant, and a very serious matter for a tenant to refuse. The service Auchendrayne now asked of Bannatyne was that he should assist him and his son to murder Dalrymple. To this end the elder Mure and Bannatyne led the victim upon the sands of Girvan at ten o'clock at night. Bannatyne, who seems to have been of 'milder mood,' had qualms, declaring it was a cruel purpose when it

would be as effective to send the youth to safe keeping in Ireland. Auchendrayne seemed to incline to this proposal also, but his son settled the question by rushing suddenly upon Dalrymple, throwing him down, and, assisted by his father, strangling him. Thereafter they waded out to sea with the corpse and committed it to the waves, which washed it up on the same spot seven days later.

Bannatyne was straightway sent to that convenient receptacle for inconvenient individuals, Ireland, and it was sworn by witnesses at the trial that Auchendrayne had afterwards hired one James Pennicuik to go to Ireland to murder Bannatyne. It is difficult to see where this chain of crime would have finished had it not come to a fitting conclusion in the trial and execution of both the Mures and James Bannatyne.

The trial has become celebrated, not because of the atrocity of the crimes committed, nor because one of the accused, the younger Mure, was put to the torture of the boots to extract evidence against himself—there was nothing unusual in either of these circumstances—but because the ordeal of touch was employed to find the murderer. The Earl of Cassilis caused Dalrymple's corpse to be exhumed, and, finding that he had died by violence, ordered all the people of the neighbourhood to attend and touch the corpse. The order was obeyed by all except the elder and younger Mure, who were not so simple as to trust themselves in the clutches of Cassilis. But Mure's daughter was one of the throng, and it was alleged that so soon as she drew near the body blood spouted upon her therefrom, in consequence of which the Mures were apprehended and put upon trial.

There are no scenes in Scotland more peaceful than the green vales of south Ayrshire, the banks of bonny Doun, and the richly wooded Girvan. The dwellings of those who enacted the bloody deeds told in this long history of violence are standing to this day, some still inhabited by lairds of the old families; others, roofless and storm-beaten, have been deserted for roomier modern mansions. The traveller may find himself wistfully musing on the dulness of the reign of security, sighing for jingle of plate-armour and bray of the trumpet to waken the sleeping woodlands—for gleam of steel and flutter of pennons to brighten the brown hillside. But, on second thoughts, he will probably reflect how much pleasanter it is, on the whole, that a country gentleman should be able to move about at his pleasure, without a clump of spears behind him and with no weightier defence than a tweed suit; and better for the tenants that they should not be liable to be compelled to assist their landlords in every enterprise, whether 'boden in ffeir of war' or equipped conveniently for 'privat murther,' on pain of forfeiture of all their goods, not to mention their lives, as was the case with James Bannatyne.

XXXII

An unsuccessful Stalk

I am three thousand feet above the sea, seeking such repose after violent exertion as may be found on a surface of wet moss thickly strewn with harsh stones, varying from the size of a cocoanut to that of a writing-table. Slashing rain slants across this dreary plateau, driven before a keen north-easter. The lines of some eighteenth-century tourist in the Highlands keep running in my head:

'Bleak mountains and desolate rocks
Were the wretched result of our pains,
The swains greater brutes than their flocks,
The nymphs as polite as their swains.'

No nymphs are within many miles, and the only swain at hand is my stalker, in whose esteem I do not rank very high for the moment, seeing that I have just missed a stag. Scarcely the moment, you will say, to provide copy for the printer, but fountain pens run as smoothly in foul weather as in fair, and there is never any time like the present. Besides, it is only sun-dials that have the privilege of recording none but serene hours. I should like to go home, for I am soaked through and very cold, but that would be at the expense of every shred of self-respect.

It is about four hours since we descried the beast I have just missed. We were then at the foot of the hill, a couple of thousand feet below this inhospitable summit. The stag, a goodly switch-horn, was half-way up, in company with five-and-twenty other animals of less note. The sun beat into that glen with a vehemence to which we have been strangers all summer; the wind was very light in shifting flaws; let it but remain fairly steady and there was an easy approach to the deer up the course of a shallow ravine. We started to climb. The heat was tremendous; the midges rose in clouds from the steaming heather, and simply tore at every exposed piece of skin; but we arrived without mishap at the appointed place. The rifle was out of its cover and I was chortling over the easy victory I was on the point of scoring, when I felt a draught of air on my left cheek, blowing thence straight on the deer.

Surely Nature has shown mercy to man in making him insensible to the odour of his own kind; to judge from

its effect upon wild creatures, it must indeed be an appalling stench. One can detect the shudder which precedes their instant flight. Our deer were off in the twinkling of an eye, but they did not cross the hill. They pulled up on the shoulder about a mile and a half from us, and the stalker decreed that we must cross the top, and come back upon them from the other side. How simple it all sounds, but what a variety of suffering it entailed upon one who will never see his half hundred again, and who, it must be assumed, had come out only to take his pleasure. First, there was the steep ascent, still under burning sunshine, and among devouring midges; then, on the summit was dark mist, driving rain, and searching blast. Next came the crawl, when cold water from without mingled with perspiration from within, till not a dry thread remained. Afterwards there was half an hour of lying flat in the wet till the deer should feed into sight; and finally, the supreme moment, when teeth must be restrained from chattering, numb limbs wakened into sudden action, and a bead, as steady as may be, drawn upon the dark carcase of the switch-horn, full in view at not more than eighty yards.

'Over him!' was all the stalker's comment after the shot; but no wealth of vocabulary could have lent poignancy to the reproach. And here am I, having munched a bundle of sandwiches, flabby with rain, speculating what greater folly I could have committed than to expose myself to such exceeding discomfort, in order to shed the blood of a creature which never did me an injury, and would not be my property if I slew it. How justly he might grumble who should be paid to do this kind of thing.

The deer having fled, the vast area of this mountain

WELL ABOVE THEM.

LONDON EDWARD ARNOLD 1903

top seems totally devoid of life. Not a sign of living creature punctuates its emptiness; even midges cannot face this cold, wet wind. But the skirts of the storm are drawn swiftly aside; the sun bursts out with dramatic suddenness, and in a moment earth and air are astir with moving things. Black heather-flies rise to their dance; they must number a million to the acre, and tens of thousands of acres are in sight around me; wan moths flutter among the scant grasses, and a frog creeps stealthily over the gray moss. Froggie does not seem in training for mountaineering, his muscle, one would say, being all too flabby for alpine work; nevertheless you are sure to meet him anywhere up to four thousand feet, tempted to these high levels by the abundance of flies. There is no bird of ravin aloft, except a scald crow of forbidding voice, so the ptarmigan begins to croon and chuckle among the rocks, and from far down the hill rises the cheerful crow of our only exclusive British bird, the red grouse. The sunshine has restored every creature to busy life: Even I, bedraggled and discredited, assume a buoyant air, and fall in with the stalker's proposal to approach some deer he has spied on the opposite hill, albeit this implies a descent of two thousand feet, and a corresponding climb on the other side at a gradient like that of the dome of St. Paul's.

XXXIII

Even to the man of mildest nature there arrives a moment when he is forced to seek relief in execration. Be he alone, his curses are audible and deep; if he is with others, habit and reverence for his company keep him silent, but not less

The growing evil of collectors

profound in imprecation: At such times one may well envy the richness of objurgation at the command of a certain Irishwoman, who was heard shrilling across the wet street of Loughrea against another who had earned her displeasure—'May the divil defile yer lintel, ye Mameluke o' the worruld!' Many a deed of violence has been averted by such harmless necessary swear-words, which afford solace—*experto crede*—no whit less comfortable, although the object against which they are directed be unknown. This I put to the proof only yesterday, the relief being instant, although temporary. The occasion, it will be admitted, was a trying one. Only two places are known to me in my native county where the dusky geranium (*Geranium phœum*) is to be found. It is not a showy plant, but it is a choice one, haunting the banks of woodland streams, and expanding satiny petals of the colour of darkest burgundy, on slender branching stems, about a foot and a half high. It is doubtfully indigenous to Britain, but it has established itself as an unobtrusive colonist in certain parts of northern England and Scotland. Summer after summer, from distant childhood, until last year, I have known a single tuft of this modest flower beside a shady streamlet flowing into the lake in my park. Yesterday, when I went to bid it good-morrow, the place thereof knew it no more. There was a bare scrape on the bank whence it had been torn by some 'Mameluke of the worruld'—in plain English, some pilfering botanist unknown. Evil repose must he have had that night, if but two or three of the wishes that I winged after him found their billet. Would that I could have served him as Gargantua did the pilgrims of Saint Sebastian! For is it not a crying shame that these creatures

should creep into all the secret places of the country and rob them of their rarest treasures? The veneer of science with which they gloze their crime only deepens the guilt. A child or a maiden passing that way might pluck the blossoms to fling them by the wayside in five minutes, and no harm done; but the mischief wrought by these wretched botanical prigs is irreparable. They prey, not on flowers, but on specimens for some beastly herbarium, and a specimen must include the whole plant, root and branch, flower and fruit, wherefore it comes to pass that never more must the eye of one faring through this wood of mine be pleased by lighting on the dusky geranium, because the solitary plant thereof, known to and beloved by me for half a century, now lies sapless and faded, pressed and gummed between sheets of paper, where may the worms speedily attack and destroy it! May the thief himself forget all about botany, and become possessed by the most acute form of philately, and be for ever baffled in obtaining the specimens upon which the victims of that form of mania set the highest value!

In all seriousness, the evil wrought by plant-collectors is a very real and growing one. The real man of science lighting upon some rare plant knows better than to dig it up. He notes its occurrence furtively, and studiously avoids publishing the exact locality, bearing in mind the disappearance of the blue alpine sowthistle and the blue menziesia from their only haunts in Britain—the first from Lochnagar, the other from the Sow of Athole. For thirty years and more there has been known to me a heathy crag, far up in the southern uplands, where, among the heather, between the stems of scattered birch and stunted oak, there are some plants of wintergreen (*Pyrola*

minor). This is a lovely thing of the heath family, with round fleshy bright green leaves the size of a halfpenny, sending up after midsummer a column five inches high of white, sweet-scented bells. It is one of our rarer plants, very local, growing only where the plough has never come; wherefore, needless to say, it is greatly sought after by collectors. But, although I generally manage to visit the spot in July, to enjoy the fragrance and beauty of this choice herb, to none but the most discreet dare I ever reveal the secret of its presence. For aught anybody knows, this colony of wintergreen may be older than the Christian religion. Betray it, and its lustrous leaves would gleam there nevermore. It is the student and the amateur, not the master, who work the mischief. The first is too often encouraged by school and college prizes offered for 'collections'; the second, having a true love for nature, perhaps learns too late how much mischief he has done. But there is another class who carry on wholesale operations; digging up wild roots by the hundred and bringing them into great towns to be retailed to householders who delight in all that reminds them of the country. Ferns are especially the quest of such depredators. It is astonishing the appetite that townspeople have for ferns, yet of all green things these are the most impatient of the smoke, radiated heat, and dry air of cities. The incident of the dusky geranium took place four hundred miles from London, whither, as yet, the wholesale spoiler has not penetrated; but the woodlands and lanes of Surrey, Herts, and Essex are despoiled each spring of every kind of herb that tempts the buyer. The legislature has been invoked to put an end to this nefarious traffic. I think a bill to that effect was before Parliament not long ago;

but one might as well pass an Act for the prevention of midges. So long as ferns and roots of wild-flowers find purchasers, there will be legions of pilferers. It is in the power of every lover of nature in some infinitesimal degree to discourage the traffic by refusing henceforward to buy any roots of ferns or wild-flowers offered for sale either in Covent Garden or the streets. The legitimate purveyors of plants are the nurserymen who propagate them.

XXXIV

Progressive Intelligence in Bees

Once, in the course of these very desultory notes, I described the beautiful mechanism whereby cross-fertilisation is secured in the great blue sage (*Salvia patens*), which we in the west are able to grow as a hardy herbaceous plant. If a stem of grass is pushed down the throat of one of the blossoms, two long stamens, their anthers charged with ripe golden pollen, move down from their concealment in the upper lobe of the corolla, and, in Mexico, the native country of this plant, would deposit part of their burden upon the head or back of some winged visitor, which, flying off to the neighbouring blossoms, would effect the desired exchange of pollen. Whatever the creature be, it has not accompanied the blue sage to these latitudes. It must be of slender build, or, at all events, have a long trunk or tongue, such as a humming-bird's or hawk-moth's; for although there is a good store of honey in the azure blooms, it lies deep down the narrow tube at the base of the pistils, and none of our native winged insects seem to be of a build to reach it in the legitimate way. I described also how I had found in certain gardens,

not in all, that the throats of every sage blossom had been bitten across, and the honey burglariously abstracted. I said that I suspected the bumble-bees, having observed that they treated the long spurs of yellow toadflax in this way; and this suspicion has now been carried to conviction. Last week, for the first time, I detected a bumble-bee *flagrante delicto*. She was most business-like at her work, hurrying from flower to flower, wasted no time fooling about the front door, but went straight to the same place in each, just where the blue becomes paler at its insertion in the calyx. A hole was bitten at the side of the throat, and the honey extracted in less time than it takes to write about it.

One particular remains to be noted. Cut across the tube of a salvia, and you get, not a circular section, but an oblong one, slightly compressed at the sides. When I first noticed the throat-cutting, several years ago, it was always performed across the front of the tube, at its greatest diameter, leaving a gaping wound. Now I can find no flowers treated in this way. The incision is always effected at the side, where the diameter is smallest, and so close to the calyx that it is not visible on the corolla after the bee has left it. This looks as if the bumble-bees had improved upon their earlier practice. The blue salvia, a somewhat uncommon exotic, must have come upon former generations of British bumbles as a surprise, and he must have gained considerable kudos who first devised the knack of getting at the honey. But invention is progressive; it seems to have been only within the last few years that the bees have discovered that it saves trouble to bite through the tube at its smallest diameter instead of its greatest, thereby getting nearer to the honey

glands. If bees are the most intelligent of insects (Lord Avebury gives the palm to the ants), so they have usually been considered the most inveterate Tories, as shown by enduring political constitution of the social species and their immemorial styles of architecture. But here is evidence of the progressive leaven in these ancient communities.

XXXV

Bumble-bees

One is sometimes asked whether our bumble-bees are solitary or social insects. Of course there are many kinds of solitary bees, and these not the least intellectual of their kind; but the whole race of *Bombus* is social, forming communities of males, females, and sexless workers, acting under the direction of a queen. Perhaps colony would be a better term than community, seeing that there exist peculiar causes to prevent the inhabitants of a bumble's nest ever approaching in number to a hive of honey-bees. In the first place, the frosts of autumn destroy the whole population, except a few females. Each of these survivors sets about in spring the foundation of the new colony over which she is to reign. Hard work she has at first, building a nest of moss in a hole in the ground or in some wall. Under the moss she builds a cell of wax—not a very neat one, indeed, but capacious enough to be lined with a paste made of honey and pollen, and in this she lays several eggs. If this cell is taken away, Hoffer found that the queen died of a broken heart, or, as a bee has no heart, let us say of the ruptured mesothoracic ganglion. After the first cell is finished and sealed, her majesty takes a few days' rest upon it; then she begins a second cell, and, if

time permits, a third. But presently the cares of maternity become almost overpowering. The eggs in the first cell have hatched rapidly; the larvæ make short work of the slender store of honey-soaked pollen provided for them, and begin crying out for more. Mother Bee has to give up egg-laying and architecture, and goes abroad to collect more food, which she pokes into the cell through a tiny hole cut in the top. The babies grow fast and become obstreperous, dinting and bulging the waxen sides of their nursery in their struggles to get out; when lo! some fine morning all is still. Every one of them has spun itself a separate cocoon of fine silk and fallen fast asleep. Then the queen knows it is safe to open the cell, because when the sleepers wake they will be perfect worker bumbles. Out they come, with gauzy wings and velvety tails—jolly, hearty little chaps, who set to work at once to relieve their royal mother of the labour of feeding the other larvæ. This is now a matter of increasing urgency, because, although the queen laid up food for the young workers, she put none in the cells of the males and females upon whom the future of the race depends.

But the queen-mother has plenty of willing workers at her bidding now, and takes her leisure, devoting it entirely to the luxury of egg-laying. Meantime, her subjects labour incessantly, collecting honey and pollen for the rising generations, storing it in the misshapen cells as they are vacated by successive hatches. Country schoolboys, rats, weasels, and foxes all know these honey-tubs, which are piled in disorderly masses, very different from the faultless regularity of the honey-bees' comb.

By midsummer the colony is in full swing, and, seeing that some of the young females are allowed to share the

queen's labours of egg-laying, might become exceedingly populous, but for an extraordinary blindness on the part of these clever insects. Every species of *Bombus* is shadowed by a corresponding species of *Psithyrus*, bees of another genus, and of most reprehensible habits. Yellow-tailed bumbles attract yellow-tailed *Psithyrus*, red-tailed bumbles have to entertain red-tailed *Psithyrus*; and so closely do the two genera resemble each other that the older naturalists failed to distinguish the difference between them. *Bombus* is the most industrious of all bees, working far longer hours than the honey-bee; *Psithyrus* works not at all. Late in the day, hours after the exemplary *Bombus* has been at work, he may buzz forth among the sunny flowers for a short time; but most of his time he spends among his host's honey-tubs, stuffing himself with sweets which don't belong to him, and encouraging his wives to lay as many eggs as possible in the house and among the good things of *Bombus*. He grows more portly than *Bombus*, who can only rear a fraction of its larvæ, because *Psithyrus* eats all the food intended for them. Hoffer found that a nest of *Bombus*, if protected from *Psithyrus*, increased to two hundred souls—I mean bumbles—whereas in another, not so protected, he counted on the first of September only a queen *Bombus* with fifteen workers and eighteen gluttonous *Psithyrus*, whereof eight were females.

The strangest part of the story is that the hosts live on the friendliest terms with their ignoble guests, working as heartily to provide delicacies for them as for their own young. So true is the verse, though in a sense never suspected by the author:

'Sic vos non vobis mellificatis apes.'

October

XXXVI

Spiders

Of all the creatures that inhabit the heavens above or the earth beneath, or the waters under the earth, there are none whereof I am conscious of more profound ignorance than the *Arachnida*, or Spiders. Yet these are animals of so much character and so varied, their ingenuity is so versatile and so consummate, that I can conceive no more fascinating and absorbing branch of study than concentrated research into their structure and habits.

The sub-class *Arachnida* forms but a link in the vast group *Arthropoda*, connecting the Myriapods or Centipedes with the Crustaceans; yet each of the seven orders composing that link would suffice for the entire life-work of any student, no matter how diligent. To realise this it is only necessary to call to mind that these seven orders embrace such a diversity of creatures as the Acarids or Mites, including some of the most odious human parasites, such as the too-familiar harvest bug and *Sarcoptes scabiei*, the cause of the loathsome itch, as well as the dreaded scorpions, the true spiders, and the curious whale-ticks and other marine parasites. The labours of Dujardin, Claparede, and Siebold upon the mites, of Dr. Dohrn upon the *Pycnogonidea* or sea-lice, and of Hermann, Latreille,

Dufour, Simon, and a host of other specialists, have by no means exhausted the field—a fact which might easily discourage more superficial observers.

Nevertheless, it is impossible for anybody who gives more than the most careless attention to animated nature to fail to take note of some incidents in spider life. There is no commoner object than a spider's web, yet what is there in nature that more completely baffles human conjecture than the nature and degree of the intellect requisite for the construction of such an admirable snare? What is more puzzling than the union in one tiny organism of mental characteristics so divergent as tender solicitude for offspring and bloodthirst almost without parallel towards creatures of the same or different species?

XXXVII

Some of the most complex and delicate performances of the lower animals appear to be unconscious and automatic. The silk-worm, once only, and that during an immature stage of existence, spins an elaborate cocoon, which no amount of practice could improve. The evidence of design is unmistakable; but who shall pronounce the builder to be also the architect? At a certain period of its growth the motor nerves of this sluggish worm set in action specialised machinery to work up material automatically stored; but the action must be wholly independent of the creature's volition. It *must* spin, whether it would or no, and it can exercise no discretion in the style or shape of its cocoon.

The Web

In the case of spiders, one has to consider the action of a mature adult instead of a larva; yet the process seems

to be none the less independent of volition. The design is so much more ambitious than the silk-worm's, the structure so much more elaborate and beautiful, and so closely in accord with the principles of human engineering and cabinet work, that one finds more difficulty in dissociating it from the independent ingenuity and conscious skill of the performer. Yet the common garden spider (*Epeira diadema*) probably acts unconsciously in setting about web-spinning. It does not reflect before putting into operation the spinning mechanism and material which it has inherited from an unseen ancestry. She (for it is the female only that concerns herself with architecture) does not gaze with hungry longing upon the flies disporting themselves in the sunshine, or speculate how, being herself wingless, she can capture those toothsome flying creatures. Indeed it is almost certain she cannot see them, for the visual powers of most spiders are very feeble, being compensated for by an extraordinary refinement of the sense of touch. She simply sets to work to apply the specialised mechanism and material wherewith she is endowed to the purpose with which they are co-ordinate. Although cut off by the period spent as an egg in a cocoon from all parental instruction or example, she is at no loss for a plan. Innate functional impulse, which is probably the right definition of that which we term 'instinct,' co-ordinate with certain specialised organs, directs the creature to the unconscious performance of certain definite acts without previous practice or experience. First, the foundations are laid, in the shape of lines enclosing the area to be occupied by the web. From this circumference the *radii* or stays are drawn to the centre, whence the spider works out-

wards, stepping from stay to stay, and laying down a thread in a wide spiral to act as a scaffolding for the finished structure. Finally, having arrived at the limits of the operative net, she retraces her steps, working inwards in a much closer spiral, laying the transverse threads at the proper distance, and devouring, as she goes, the original scaffolding threads which enabled her to perform the work.

If it is difficult to dissociate such a consummate piece of engineering from the operation of a keen intellect, still more so is it to regard the far greater complexity of snares produced by certain other spiders as the mere outcome of functional automatism. Nevertheless, that seems to be the true explanation. If the spider's web were the outcome of the creature's individual ingenuity and intelligence, there certainly would be manifest some variation in design among millions of webs by different individuals of the same species—some shortcomings in first attempts. No such variation—no such shortcoming—can be detected. There is no ''prentice hand' among spiders. The first web of each spider is of normal design and perfect construction. Destroy it, and the creature will execute another exactly the same, no whit better adapted for the capture of passing flies.

But to recognise this performance as the effect of unconscious automatism is by no means to deny the probability of an external directing power. On the contrary, it would be easier for most of us to homologate the most exacting dogma of scholiasts and theologians than to conform to the demands of ultra-materialists and refuse to admit the necessity of recognising some agency beyond, above, and more powerful than matter.

How different from the spider's would be human performance directed by personal intelligence. Suppose that a Cockney from Spitalfields found himself so situated as to be forced to make a living as a herring-fisher or a rabbit-catcher. Motor or functional co-ordination would not help him much, for he can neither swim like a fish nor run like a rodent. He must first seek instruction from experts or consult suitable literature; and then, even if he may dispense with a laborious apprenticeship in these comparatively simple crafts, he must obtain or construct special instruments, in the use whereof he will prove deplorably unskilful at first. Even so, he would be availing himself of the accumulated experience and manifold devices of past generations. Deprive him of these, and he must die of starvation on the shore of a sea teeming with herrings or in the best stocked warren in the realm, before his intelligence should enable him to supply himself with food.

XXXVIII

Messalina of the Meshes

Of the spider's ferocious attributes an instance was lately brought to my observation by a friend, so revolting as almost to obliterate the traditional reverence which all true Scotsmen owe to the whole race of spiders. In the corner of his gunroom one of the long-legged race of spiders (I am quite unable to define the species) had spread her net. The place was badly lighted, and altogether an extremely unlikely one for sport with flies. 'Fool,' thought my friend, 'you'll catch nothing there. Your best chance would be in a sunny place; here you are like to die of starvation.'

Little did he understand the demoniac purposes of the

Lady of the Net, or anticipate the hideous drama of which that gloomy corner was about to be the scene. On the morning following that on which he first noticed the web, he observed that its architect, as he had expected, had caught no flies; but apparently she possessed some secret power of attraction, such as Armida wove into her girdle, for, as he watched, he beheld a stranger spider approach —knight-errant and suitor for the lady's affections. She received him graciously. There followed in due course—

> 'Of mild delays, of tender scorn, of sweet
> Repulses, war, peace, hope, despair, joy, fear;
> Of smiles, jests, mirth, woe, grief, and sad regret;
> Sighs, sorrows, tears, embracements, kisses dear,
> That, mixed first by weight and measures meet,
> Then, at an easy fire, attemper'd were.'

Happy lover! nor less credulous than others of his kind. Well for him if he had laid to heart (a spider's heart is a much more obvious organ than his brain) some of the innumerable lessons of the fickleness of the sex. Instead of lingering in dalliance, ogling the adored object with his eight foolish eyes, he would have departed straight away upon his proper business of fly-catching. But he felt secure; he knew of no returning husband to hasten his departure, so he loitered on in the scene of his brief joys.

Presently the lady's mood changed; the languor left her lids (or would have done if there had been any lids), a lurid light glowed in her orbs, the lover started from her in terror; too late—with the swiftness and violence of a tiger she sprang upon him, fixed her sharp fangs in his throat, and poured in the numbing poison stored at their roots. After a few futile struggles, the luckless

visitor's limbs relaxed, and his murderess, disposing herself luxuriously to the feast, proceeded to suck his juices until his remains hung in the net a phantom of his former nimble self.

On many days after a similar tragedy was enacted, until, when I visited the scene, the domestic apartment presented the following appearance. At one angle of the web lay this most dissolute of females, closely guarding the fruit of her amours enclosed in three round brown cocoons, while in her full view hung in different parts of the net the withered corpses of no fewer than thirteen husbands or paramours, all of whom had fallen victims to her insatiate hunger. It was a truly sickening sight, affording one more example of that most perplexing fact—the absolute heartlessness of the scheme of Nature. One object, and one alone, seems to be kept constantly in view—namely, the perpetuation of the species. Let that be secured, and all other considerations are thrown to the winds. We human vertebrates have come to regard life as a sacred thing, not to be wantonly wasted—nay, as a thing to be reverently protected, and protracted to its utmost span. But Nature, in ten thousand normal instances, inculcates the doctrine that the life of the individual is nothing—the endurance of an aggregate of individuals everything. In the wonderful synopsis of animated nature given in Psalm civ., King David, who never lost the true shepherd's eye for wild creatures, notes not only the Creator's care to provide 'meat in due season' for them, but also the stern indifference with which He takes away their breath and allows them to die and return to their dust. What chiefly strikes the inquirer into the habits of the smaller and more multi-

tudinous creatures, is the apparently needless amount of slaughter and cruelty inseparable from their mode of life. Why should such an abominable menage as that described above have been planned, seeing that other creeping things, leading far more exemplary lives, enjoy quite as fair a prospect of perpetuating their species? The further problem remains, seeing that spiders evince signs of intelligence out of all proportion to their size and position in life, why do the males not learn to avoid the ghastly fate which has overtaken countless generations of their hapless sex?

XXXIX

Nemesis

Well, there is still justice under Heaven, and it has overtaken the Lady of the Net. I left her twelve months ago (1900), ensconced in her den, with three round brown bundles of eggs behind her, and the wasted skeletons of her thirteen husbands dangling in the web under her eyes. Last summer she spun a brand-new web, and began the old game. Five more husbands, one after another, were tempted in, and, after a brief love season, were devoured by this Messalina of the Meshes.

Then befell judgment. A younger and sprightlier spider spun a web below the other, whereunto the males resorted, to the neglect of the other house. The two ladies met; words passed (at least that may be assumed); from words they went to worse; a fierce battle ensued; Messalina I. was beaten and eaten up by her rival, who may very well have been one of her own daughters.

Such be some of the less admirable passages in nature.

XL

Some Lepidoptera

Among the most memorable features of the autumn now passing (1901) has been the extraordinary number of Red Admiral butterflies. Mr. Robert Service, the well-known naturalist, mentions in the current number of the *Annals of Scottish Natural History* that he counted upwards of two hundred of these brilliant creatures in a walled garden near Southerness. I cannot record anything approaching that from personal observation, but one sunny morning in September I saw seventeen busy upon a single plant of *Sedum spectabile.*

Another of the Lepidoptera which has appeared in unusual force in the North this season is the Death's-Head moth (*Acherontia atropos*). It has been found in south-west Scotland, not only, as heretofore, in the perfect state, but also as larva and pupa, which seems evidence that this fine exotic species is now completely acclimatised with us. The same seems to be the case with the Clouded Yellow butterfly (*Colias edusa*), until lately supposed to be recruited in Britain only by wind-blown individuals from the Continent. 'Clouded Yellow' years used to be marked by entomologists at long intervals, but of late the appearance of this swift-flying insect has been so frequent as to indicate that some of the pupæ survive British winters. The cockroach, the bed-bug, and other uncleanly outlanders have long ago established their rights as naturalised British subjects: in days when we have to deplore the extermination or diminution of many of our native creatures, we hail with welcome the spontaneous immigration of desirable foreigners.

XLI

Owls

The advocate of an unpopular cause must be prepared to suffer for righteousness' sake, and I am not surprised that the plea which I have made from time to time in favour of an oppressed class of my fellow-creatures—the owls, to wit (no pun intended)—should have earned for me some uncomplimentary epithets from the disciples of use and wont. Next to the *Agnus Dei*, the most moving appeal in the Litany is that which recites what 'we have heard with our ears and our fathers have declared unto us.' Nevertheless, with due reverence be it spoken, in lay matters our fathers have shown a culpable recklessness in what they have told us. They enjoined, for instance, the duty of burning witches, and set us a spirited example in that line of public duty. They prescribed profuse bleeding as the surest remedy for almost every ailment, and held it to be expedient to drink a bottle of strong port daily. Subsequent experience, submitted to reflection, has led us to regard the statements of our fathers with a good deal of suspicion, and to apply to them the ordinary rules of evidence. What really distresses me in this matter of how to deal with owls, is the apparent incapacity of certain expensively educated persons to understand the nature of evidence, or, at least, to admit that it is respectable to require evidence before condemning beautiful animals to the penalty of death.

The charge against owls is that they destroy young game, especially young pheasants, hand-reared at the coops. Now, of the many persons who have written to me to say that they wish with all their hearts they could agree with me as to the innocence of owls in this respect,

but that they have lost numbers of young pheasants from the depredations of owls—of all these persons, I say, *not one* has been able to speak from personal observation. Every one cites his gamekeeper's testimony. Obviously, then, this is mere hearsay evidence, such as would not be permitted in any court of justice. Let me recite once more the facts which seem to make it impossible for owls to prey regularly on young game birds in this country.

Of the nine or ten species of owl found in the British Isles, three only are able to hunt by day. Of these the two largest—the eagle owl and the snowy owl—no doubt are formidable birds of prey, which, were they numerous, it would certainly be justifiable to destroy in the interest of more valuable animals; but both these noble creatures are among our very rarest visitors, and only stoop to our shores under stress of weather. Therefore, these do not come under consideration in the present question. The third British day-hunting species is the short-eared owl (*Asio accipitrinus*). Undoubtedly, this bird would work mischief among young pheasants and partridges but for the circumstance that it is a winter visitor to this country. It is one of our most regular seasonal migrants, arriving and departing simultaneously with the northern-bred woodcocks, hence popularly known as the woodcock owl. Thus it never sees our pheasants except as full-fledged rocketers, each more than twice the weight of an adult short-eared owl. It is true that a few pairs of these owls do remain to breed in Orkney, Shetland, and on the Scottish and Northumbrian moors; but the main body departs each spring, except when, at intervals of many years, a certain cogent and peculiar circumstance induces them to remain. That circumstance is the outbreak of a

plague of field-voles, such as desolated great tracts of hill pasture in southern Scotland in 1891 and 1892. In those years the short-eared owls not only assembled in unusual numbers upon the ground affected, but remained to breed there. Nay, more. Not content with a single setting each of four or five eggs, the females reared two and three broods in a season, sometimes laying eight or nine eggs in each setting. As chairman of a Departmental Committee appointed to devise means of mitigating the vole plague, it became my duty to visit several farms where the little rodents were most numerous, and witnessed the owls doing excellent service hawking about over the heather in the month of June, and pouncing upon the darting voles. When the vole plague abated in the third season, the owls took to preying upon young grouse, but only as a make-shift. They resumed their normal migratory habits, and in the fourth season a man might have hunted Eskdale moor the whole summer through and failed to see a short-eared owl. The short-eared owl, therefore, must be acquitted on the plea of alibi of destroying young game in Britain. As for the night-hunting species—the long-eared owl, the barn owl, the tawny owl, etc.—their defence is complete. Young winged game is not abroad in the hours of darkness, when they seek their prey.

But now comes a totally different charge against one of the most respected members of this ancient family. A friend writes me from North Wales (1902) that the game-keepers where he has been shooting attribute the unusual scarcity of snipes this season to the malfeasance of long-eared owls (*Asio otus*), and that in consequence the decree has gone out for the utter destruction of these beautiful birds. Now this charge is such a novel one that it

deserves attention. Unlike its cousin the short-eared owl, the long-eared owl does not hunt by day, and it remains in this country all the year round. Its misdeeds, if any, are performed under cloud of night, which makes it proportionately difficult to catch it *flagrante delicto*. What is the evidence upon which these Welsh gamekeepers have condemned it to death? Purely circumstantial, and as slender as that which might be produced to account for the prevalence of appendicitis by the number of omnibuses in Piccadilly. It amounts to no more than this, that during the present season in North Wales there are fewer snipe than usual, and as many, or more, long-eared owls. Have you a woodland beside a snipe bog? It is certain to contain long-eared owls, by reason of the abundance of small rodents in marshy ground.

I now come to my point—the point which it is discreditable to the intelligence of any person professing to a knowledge of wild creatures to evade. So far from circumstantial evidence only being available as to the diet of owls, it happens to be impossible for these birds to disguise or conceal the nature thereof. Like the falcons, all owls eject from the mouth the indigestible parts of their food such as the bones, fur, feathers, wing-cases of insects, and, so on, in the form of 'pelts,' or elongated pellets. These pelts may be collected under the roosting-places of the owls, and when placed in warm water disclose precisely what the bird has captured and eaten during the four-and-twenty hours preceding ejection. I shall never forget the state of the floor of a young fir-wood on Eskdale moor during the vole plague in 1892. It was thickly covered with the pelts of both long and short-eared owls, and these pelts consisted exclusively of the *débris* of voles.

Has it occurred to one of these Welsh wiseacres to examine the pelts of the owls in support of their accusation? and if so, have the remains of snipe been found in them? If not, then I claim for the accused a verdict of not guilty.

Meanwhile, let me suggest a more probable cause for the scarcity of snipes. It so happens that the present season is marked by an extraordinary scarcity of golden plover. There are certain fields in my neighbourhood which are regularly frequented by these pretty birds. In ordinary years I would bet that on any winter day I could show flights there varying in number from a dozen to two or three hundred. These fields lie between my house and the nearest railway station, so I have to pass them on an average at least twice a week. This year I have not seen a single golden plover on them, though curlews are as numerous as usual and lapwings far more so. On the sea-coast there seems to be not one golden plover for twenty that may usually be seen there. Now for the reason. We depend for our winter flights of golden plover upon birds bred near or within the Arctic Circle. Those that were hatched upon our own moorlands are at present far to the south—in Spain, Africa, on the Danube, etc. One of the chief breeding-grounds of the northern contingent is Iceland, although the lapwing does not resort there to breed; and I am informed by a friend well acquainted with that country of a heavy calamity which overtook the birds there last spring. Three days after the arrival of the main body at the end of April a terrible snow-storm swept across the island. Tens of thousands of golden plover perished. One farmer collected twelve hundred dead on his farm alone. There is no mention of snipes, but it is highly probable that they suffered in

equal measure. Note that, like the plovers, all British-bred snipe, which are those which would have suffered from long-eared owls, left the country for southern latitudes in October, and had the owls killed every one of them before they started on their journey, that could not have affected the numbers in the winter flight.

November

XLII

Can any of us, by taking thought, reckon what his coal costs him? Not merely in cash; that consideration could scarcely figure under the heading of this paper. Neither do I mean the grosser and more patent effects of the coal industry, especially where concomitant iron-ore has brought blast furnaces, with ruin of all that is sweet and fair in landscape, sullied streams, asphyxiated trees, rows of bleak, featureless cottages. It was in the forest of Arden, upon the skirts of what is now the Black Country, that Amiens once could not refrain from singing:

Lichens

> 'Under the greenwood tree, Who loves to lie with me,
> And tune his merry note Unto the sweet bird's throat,
> Come hither, come hither, come hither!
> Here shall he see no enemy
> But winter and rough weather.'

Even if your lines lie not exactly where Mammon with murky thumb has squeezed all beauty off the face of the land, but have fallen on the outskirts of some great industrial centre, where green things still abound and wild creatures come to rear their young—even there you have to pay something for your coal which is not settled with the chandler's bill. Your stream may run as clear as others,

but the braes round which it circles wear a sophisticated aspect; the fern springs as fresh here as elsewhere, but the greenwood has forfeited some of its special grace; the gray crag drops as sheer from its crest as in any Highland glen, but it has parted with some elements of dignity. Only the other day, when strolling through a princely demesne, well stocked with fur and feather, but within sound of a great manufacturing city, did I hit by accident upon the secret. 'Where were the lichens?'

There were none. The humblest of all forms of terrestrial vegetation had ceased to exist within the zone of coal-smoke. That was why the wayside boulders showed so dark and monotonous, and the tree stems seemed grim and unyielding as wrought iron. There happened at the time to be no impurity in the air; it was a serene winter's day—the sun unclouded, the lift blue, a brisk nor'-west breeze flying across the Clyde from the snowy Highland hills. But it was easy to understand that, with the wind from another quarter, or in calm, damp weather, when fog broods over the plain, the atmosphere would be charged with the waste products of combustion. Men, beasts, and trees manage to thrive through it; only the lowest organisms succumb.

Of course there is nothing new to science in all this. Of myself I know nothing, or next door to nothing, about the cellular cryptogams, but on returning home I looked up a treatise on lichens by the Rev. J. M. Crombie, and among the first statements that caught my eye was that 'their fully developed condition is a sure indication of the purity of the air.' Obviously, the lichen's impatience of coal-smoke is one of the elementary facts known to every cryptogamist, but a fact acquired at first

hand from Nature without a prompter makes a firmer impression than one gathered from books. It pleased me to receive from high authority explanation of a phenomenon which I had mooned for half a century through the world without identifying till last week. The explanation reveals in a flash the unsuspected balance remaining at our debit after the coal-master's bill is paid. Unsuspected—only because our lungs and nostrils have accommodated themselves to that *odeur anglaise* which struck Lady Mary Wortley Montagu so offensively on her return from travel. Edward I. marching south from a Scottish campaign, was so deeply disgusted with the evil-smelling vapour that hung over his capital, that he issued an edict forbidding any citizen to burn sea-coal in London on pain of death. Imagine what a fair aspect the city would assume were it not for its smoke. Westminster Palace would receive in course of years a silvery veil of lichen on its sunny aspect, a tapestry of green moss on its northern face. The Abbey would lose its gloom, and glimmer instead with gray and gold. Tree-trunks in park and street would part with their grit and grime in exchange for a delicate vesture, kindly to the touch and restful to the eye; all but the planes, which would continue to strip to their new buff skins each year. And, mark, that neither to stone nor tree is the slow growth of lichen other than beneficial. It protects the stone surface from corrosion and waste by carbonic acid, and aids the outer bark in shielding the integument of the tree from frost and heat. It is the birthright of trees to afford foothold for the 'corticole' section of lichens.

Foothold, and no more. The lichen is no parasite. It

asks and receives nothing from its host but standing room, drawing all its nutrition from the sun and rain of heaven. This is specially interesting in connection with the chemical properties and economic uses of lichens. One is so accustomed to think—of course wrongly—that vascular plants, the green things of the earth, extract and distil their various properties only from the soil wherein they are rooted, that it surprises one to find that such primitive cellular plants as lichens, which possess no means of deriving nourishment except from the air and light and rain, contain such unexpected substances as iron, salt, sugar, oil, resin, starch, and a whole host of chemical agents. The Highlanders who scrape the crottle and 'staneraw' from the rocks to dye their yarn withal, are pursuing a very ancient industry; for society was in a very unfinished state when various kinds of lichens were made to yield their secret virtue of producing rich dyes in reaction to ammonia—scarlet, purple, yellow, russet, and green. Litmus, commonly used by chemists for the detection of free acids and alkalies, is extracted solely from species of *Rocella* and *Lecanora*. Arctic travellers nowadays carry their own provender with them, cunningly preserved; but the pioneers in high latitudes sometimes owed their lives to 'Iceland moss' and *tripe de roche*, ground to powder and baked in cakes. All these lichens are attached to rock or soil, and some people may feel sceptical about the assurance of men of science that they draw nothing from that on which they grow; but the most nutritive lichen of all is above suspicion, for it grows detached from any foothold. This is the manna lichen (*Lecanora esculenta*), which lies in loose lumps or cakes, several

inches thick, over vast tracts of arid steppe in Tartary and Asia Minor, and has often served to preserve life in man and beast when more ambitious crops have failed. From the reindeer moss (*Cladina rangiferina*), the chief sustenance of those great deer in winter, the Russian peasant has even learned to distil an ardent spirit.

Lichens—some of them, at least—possess one quality which, while it appeals powerfully to the imagination, tends to deter all but the most patient from attempting their systematic study. That quality is their immense longevity and the exceeding slowness of their fructification. Human life dwindles to insignificance before that of a patch of stone lichen. The oak may live down fifteen or twenty generations of men, and complete each season its cycle of bud, flower, fruit, and fall; but nothing bides its time like the lichen. It may live down fifteen or twenty generations of oaks. Mr. Crombie cites the instance of a patch of *Physcia parietina* growing on a granite wall. After five-and-forty years all the progress he has been able to record is that 'the thallus is now well developed, but no fructification whatever is visible.' In fact, given no violent cosmic or permanent atmospheric change, some lichens appear to be capable of immortality, containing in their structure no occasion of death. *Lecidea geographica*, the species which spreads those beautiful silvery stains in slowly broadening circles upon the rocks, must be known to everybody. It is found on the highest mountains in the world, wherever there is a surface clear of ice and snow, and some of its patches probably date from a time before man had come to claim the lordship of creation.

Curiously enough, within three miles of where I am

sitting, a rocky headland juts out into the Irish Channel, and enables me to assign a respectable age to a colony of lichen thereon. It bears the name of Benbuie—that is, the Gaelic *beinn buidhe*, yellow head—obviously derived from the golden lichen (*Parmelia*) which still covers the verticle face of the cliff. Now, Gaelic has not been spoken in this part of Galloway for three centuries at least, therefore——

Let me counsel any one who would derive from lichens the delight they are capable of affording, to carry with him in the woods or on the hills a good pocket lens.

XLIII

A gracious scene

Perhaps of all the privileges of civilisation there is none that adds more to the zest of life than the rapid contrast in scenery secured by modern means of locomotion. 'O botheration! he's at it again,' I hear some reader ejaculate, wearied unto death's door by the incessant chortlings from press and platform about the marvellous progress of the nineteenth century. Nevertheless, I must out with it. The change accomplished in the space of a single night from the dismal, choking atmosphere we have lately been called upon to breathe in London, to the limpid, though fitful, climate of the Scottish west coast, is too like enchantment to be brooked in silence. Of all the moods of this too versatile temperate zone, there is none that suggests fairyland more surely than a shining mid-winter day by the shore. Alexandre Dumas—gentlest of satirists—girded with unaccustomed bitterness against the winter sun of England—'une de ces rares journées d'hiver où l'Angleterre se souvient qu'il y a un soleil.'

Perhaps he never saw it reflected from the western ocean, having made his escape over night, as I have done from darkness as of the pit—darkness which might not only be felt, but smelt.

> 'Nor Springe nor Somer's bewty hath such grace
> As I have seen in one Autumnall face.'

A fleeting boon—so brief is the span from sunrise to sunset, but how priceless while it lasts! Looking over the myrtle and arbutus which fringe the window at my elbow, how gracious is the scene! The sun, low circling, sheds oblique radiance, touching scarlet and coral berries into splendour, waking the close sward into breadth of intense, voluptuous green, firing the russet of withered oak and beech, and limning their shafts and branches with oxydised silver. Birds of many sizes, hues, and gaits, turn their breasts to him, preening themselves in all the pride of fresh plumage; positively there is a sub-tropical suggestion in the sulphur and black and slaty blue of that ox-eye tit, so bravely is he lit up. As for the chaffinch on the spray above, he is always so well dressed that a little sunshine more or less scarcely brings him into the category of the showy. He reminds one of somebody's definition of a really well-dressed man —one that, when he left the room, you could not for the life of you describe what he had on.

XLIV

Fieldfares are surely unusually abundant with us this autumn. The last time I paid them much attention was in July, when they were busy, oh so busy, with their nests in the alders fringing a great

Fieldfares

green Norwegian river. I could not but speculate upon the difference there must be in the digestive powers of nestlings reared in a humdrum British summer, wherein even the longest day yields place to a period of darkness, when supplies must be knocked off, compared with that of birds reared in these high latitudes, where the summer night is scarcely a transient dimness. I could not make out that the parent birds ever went to sleep. At whatever period of the day or night I happened to pass through that gray alder copse, there they were, stuffing their insatiable progeny with good things. The fieldfare very seldom condescends to rear its young in Britain, but in Norway its nesting colonies are very notable features in the forests. Unlike other thrushes, they do not abandon their gregarious habits in the breeding season. Now they are with us again, as is their wont in winter, and very distinguished they appear, flashing along in their lofty, curveting flight. They have a far more gamey appearance on the wing than any other of the British thrushes; indeed, they are reputed to be excellent on the table. But, Lord! we have plenty of variety in diet without being tempted to persecute these fine birds for their flesh. Luckily, they take good care of themselves; none of their relatives are so gun-shy as they. Perhaps it is the vast solitudes wherein they are reared that make them so wary on arriving upon a man-infested island like this. Certain it is, there is no song-bird so difficult of approach. Bicycling lately one bright autumn day I saw a flock of many hundreds of fieldfares in some high hedges and roadside trees, but not one of them would allow me to get within sixty yards of him.

XLV

The unusual numbers of fieldfares (1901) bodes trouble should this winter prove a hard one, for seldom have I seen such a poor store of winter berries. It is quite the exception this year to see a holly or a hawthorn bearing a decent crop, at least in this district; and greatly the fieldfare relies on such provender. Not so much, however, as his cousin the redwing, of all birds the first to suffer in seasons of scarcity. Redwings die in hundreds in severe weather, of hunger, not of cold; for birds, albeit they always go barefoot, are strangely tolerant of cold. (Remember this, ye over-thoughtful ones who hang your woodland captives in cages on a brick wall 'to enjoy the sun'!) Curiously enough, though fieldfares so greatly abound, I do not recollect having seen a single redwing this season. Yet both species are Scandinavian breeders, and fare hither in winter in quest of similar food. It almost seems as if the redwing intelligence department had received notice of a shortage of berries in Britain, and had steered their course accordingly.

Bird-Migration

How little we know as yet of the influences, the motives, the aims of bird-migration. With its grosser phenomena we are fairly familiar, thanks to the late Heinrich Gätke and the statistics furnished by intelligent lighthouse-keepers. Perhaps it is our ignorance that makes so conspicuous the failure of our attempts to acclimatise foreign species. I care not to reckon how many of my 'saxpences' have gone bang! with nothing to show for them. My spoonbills flew to other meres, and were shot by excited field-naturalists; my purple water-hens, lovely creatures, strayed to the stubbles, and

were catapulted to death by schoolboys (oh! for one hour of Elisha and his she-bears); my wood-ducks (I had a flotilla of fifteen) first showed a morbid propensity for laying their precious eggs in cottage chimneys, and then took to philandering on the seashore by night, and were potted by flight-shooters. The only permanent additions to the resident fauna for which I am responsible are three in number, and they are not examples of acclimatisation, but of restoration—badgers, to wit, which burrow and breed, but never bless my eyes with a sight of their streaked faces; jays, about which my neighbours use dreadful swear-words; and squirrels, which—no, I will not admit yet that they are incompatible with clean forestry. Let us change the subject.

XLVI

Animal Intelligence

We are all familiar with a certain class of anecdotes in favour with readers of the *Spectator*—stories illustrating intelligent behaviour in the lower animals. Unluckily, they are almost always told by untrained observers biased by affection for some particular cat or dog, and predisposed to hypothetical interpretation of facts. How cautious one ought to be in the endeavour to distinguish between inherited instinct and intelligent reflection there are a thousand examples to prove. The sister of the late Mr. Romanes had a pet capuchin monkey of an exceedingly irritable temper. She noted in her diary that one day this creature bit her several times, and seemed afterwards overwhelmed with shame, sitting quite quiet, and hiding its face in its arms. The obvious deduction was that it possessed an ethical sense, and was

conscious of wrongdoing. Had Miss Romanes not been accustomed to apply the sound rules of evidence, the behaviour of her capuchin would have been cited thenceforward in support of the untenable theory that animals have a sense of right and wrong according to a human moral standard. But her critical faculty induced her to add this significant footnote. 'On subsequent observation I found this quietness was not due to shame at having bit me: for whether he succeeds in biting any person or not, he always sits quiet and dull-looking after a fit of passion, being, I think, fatigued.'

Very few dog owners are accustomed to the mental discipline necessary for the application to the conduct of their favourites of such criticism as Mr. Lloyd Morgan has lately described in his thoughtful volume on *Animal Behaviour*. He owned a fox-terrier, which had the run of a court beside his house, separated from the road by an iron railing and a gate, which swung outwards by its own weight on the latch being raised. The terrier, being an animal of spirit, naturally wanted to get out upon the road, where he sniffed adventure, and used to run along the parapet wall, thrusting his head between the railings. Now this parapet brought him just upon a level with the latch, under which, one day he happened to poke his head. In drawing it back, the latch was raised, the gate swung open; behold the dog free of the road! An undisciplined observer would have jumped to the conclusion that this dog had seen his master raise the latch, noted the result, and put two and two together, implying that the animal had the power of thinking a matter out. Not so Mr. Lloyd Morgan. He coldly recognised a fortunate occurrence arising out of the natural restlessness of the

dog. In other words, it was a pure fluke; but it passed into experience, for it happened more than once. Dogs, of course, are exceedingly susceptible of experience; after each successive repetition there was less poking of this one's head into wrong openings, till at last he 'learnt to go straight and without hesitation to the right spot.' Yet the same dog 'seemed to be incapable of perceiving the nature of the difficulty which vertical iron railings presented to his passage with a stick in his mouth.' When sent after a stick into a field through railings six inches apart he dashed back with it, always held by the middle, and found his return hopelessly barred by the ends catching in the railings. Nor, although the experiments were continued through two summers, did this highly intelligent animal ever change his behaviour with the stick, or learn what a moment's real reflection would have taught him—to pass it through the railings lengthwise.

XLVII

Insect Mechanics

Occasionally the close observer comes across startling manifestations of intelligence in animals very far inferior to dogs in the scale. The infinite varieties of device and function in insects are usually affected by means of highly specialised organs adapted for definite purposes. But in the course of his most interesting studies upon the habits of the solitary wasps, Dr. Peckham was witness of the behaviour of one of the genus *Ammophila* which it is scarcely possible to account for by intelligence profiting by chance experience, as in the case of the fox-terrier lifting the latch of the gate. The deliberate use of a tool is generally supposed to

postulate reasoning power, yet it would seem preposterous to grant in a little sand wasp what we are compelled to disbelieve in the highly organised vertebrates. Dr. Peckham watched the wasp in question digging a hole in the earth, depositing therein an egg, together with a spider, which she had stung into paralysis, to feed the grub which should be hatched in due course. Then she filled up the hole with sand or earth, jamming it down with her head.

'When at last the filling was level with the ground, she brought a quantity of fine grains of dirt to the spot, and, picking up a small pebble in her mandibles, used it as a hammer in pounding them down with rapid strokes, thus making this spot as hard and firm as the surrounding surface. Before we could recover from our astonishment at this performance, she had dropped her stone and was bringing more earth, and in a moment we saw her pick up the pebble and again pound the earth into place with it. Once more the whole process was repeated, and then the little creature flew away.'[1]

The whole of this performance is so unexpected, so little in accord with the manifestation of the unconscious impulse which we define as instinct, that even Dr. Peckham's high reputation as a scrupulous observer might fail to convince sceptics that he had not been deceived; but similar behaviour on the part of a wasp of the same species has been recorded independently by Dr. Williston, of Kansas University.

Another resort to mechanical aid has been described by more than one independent observer, this time on the part of a co-operative or social insect. An Asiatic ant (*Ecophylla smaragdina*) makes a house by curling up

[1] Peckham's *Instinct, etc., of Solitary Wasps*, p. 22.

the edges of leaves. Having no means of their own of fastening the structure, these ants have recourse to their own larvæ, which have glands secreting a mucilage for the formation of a cocoon. Drawing the edges of the leaves together, the ants pass the larvæ (small white grubs) to and fro along the two surfaces, which presently are glued together by the thread of soft silk proceeding from the spinners of the larvæ.

XLVIII

Insect Sociology

The civilised organisation of ants and bees is an endless source of wonder-stirring manifestation. Lord Avebury and others have explained their perfect co-operation, their respect for authority, their habits of slave-keeping and tending herds of aphides; but, perhaps, it is not so commonly known that one species of American ant live by an elaborate system of horticulture. These leaf-cutting or parasol ants are so called from their spending their time in running about with circular pieces cut from the leaves of trees. Often the nest is at a considerable distance from the tree. Mr. M'Cook describes one instance where a passage ran from the nest about eighteen inches underground for 448 feet, and then aboveground for 185 feet to the tree, the whole course being almost in a straight line. Nobody knew why such masses of leaves were stuffed into the nest, until Alfred Möller discovered that the harvesters pass the crop into the hands of a specialised gang of workers which remain within the nest. These, having cut up and masticated the leaf fragments, store them in heaps and wait till a slender fungus spreads through the mass. This fungus they treat in a

peculiar way, biting it and causing it to throw out a white abnormal growth, which supplies the community with their chief diet.

XLIX

Of all the infinite varieties of nest architecture none is more strange and none more scientific than that practised by the *Megapodidæ*, or Mound Birds, of Australasia; none is more likely to set one speculating upon the delimitation of instinct and reason, if, indeed, there be any definite frontier between them, and if what we revere as reason be not merely the fuller exercise of and evolution from that function or agency which the older naturalists agreed to designate as instinct.

Mound Birds

The *Megapodidæ* embrace a group composed of three genera confined to Australasia and the islands of the Eastern Archipelago and Pacific. These genera contain but few species, all distinguished by an extraordinary development of legs and feet, which are specialised for the purpose of a peculiar mode of nest-building. The birds start at a considerable distance from the spot which the hen has chosen to deposit her eggs; walking backwards, they scrape together with their powerful feet all the grass and leaves in their path, and pile them in a heap, in the lower part whereof the large eggs are laid. The process is continued until there is piled above the eggs a mound of vegetable matter mingled with soil to the aggregate weight of several tons. The most ambitious architect is the Australian megapode (*Megapodius tumulus*), a pair of which, although they are no larger than Dorking fowls, have been known to construct a mound measuring 150 feet in circumference. This,

however, was not the work of a single season; for this species use and add to the same mound year after year.

The eggs having been deposited, the parent birds go about their business, which is not that of incubation. They act as if they had a perfect understanding of what happens when vegetable matter rapidly decays, and trust to the generation of enough heat, not only to preserve life in the eggs, but to hatch them. Still, all this prescience would be in vain, unless some precaution were taken to prevent these neglected eggs from addling. Eggs laid upon their sides in a patent incubator would never hatch unless regularly turned. The yolk would penetrate the white, adhere to the shell, and die. This seems to be perfectly well known to the mother megapode, for she arranges her long, thin-shelled eggs separately with the small end downwards. Nor is this the end of the mystery. The chicks are hatched fully equipped for the business of life, with wing-feathers well developed and capable of almost immediate flight; but it is not easy to understand how they retain life while burrowing through the steaming mass of fermenting material to the outer air.

Now, all this may be read in any encyclopædia or work on Australian ornithology, and is worthy of all credence, resting as it does on the testimony of trustworthy and scientific witnesses. But the mystery is brought home to one by seeing mound birds at work in an English woodland, pursuing their traditional craft with wholly unfamiliar materials and environment. It was my privilege lately (1903) to see five or six of these huge mound-nests in the Duke of Bedford's park at Woburn Abbey. In that

spacious demesne many thousands of exotic creatures have found a congenial home, and among them the Brush Turkey (*Talegallus Lathami*), a bird bearing a general resemblance to a common turkey, the male being of about the same size, with a naked head and brightly coloured wattles. Mr. Savile Kent, a good authority on Australasian zoology, says that the incubators of this species are co-operative: that several pairs of birds combine in constructing them, and lay their eggs in common; but I could not learn that this had been observed at Woburn, where each couple is credited with the construction of a separate mound. Neither has the male bird been observed keeping open a vertical ventilating shaft, as was reported to be the practice of one in the Zoological Gardens. Certainly, in the mounds which I examined at Woburn, all of which presumably contained eggs, there was nothing in the nature of a shaft, although there was a distinct, but shallow depression on the summit of each. Nevertheless, the male bird has been seen at Woburn to visit the mound during the process of incubation, and to thrust his wattles into it at different parts as though he were taking the temperature. The mounds themselves resemble nothing so much as heaps of garden refuse. The brush turkey does not build such enormous heaps as those of the Australian megapode, although it is a far larger bird. Those at Woburn vary between thirty and fifty feet in circumference, and between four and five feet in height, and appear to contain three or four tons of material. They are constructed in thick parts of the wood, generally under the dense shade of yew, fir, or other evergreen. Sometimes the brush turkey repairs an old mound for the eggs of a new season, but as often as not a new one is started.

The birds are very jealous of any interference with their mounds. If one is meddled with, they desert it straightway, and start a new one.

Far on every side extend the tracks of the builders, sometimes crossing the short, close turf of mown rides, as they laboriously kicked the leaves and grass behind them to the appointed spot. Apparently, nothing can be more complete than the acclimatisation of these antipodean fowls. The parents may be seen picking their way through the herbage as much at home as common pheasants, and the eggs hatch with satisfactory regularity. It is remarkable that some eggs removed from a mound and placed in an incubator failed to hatch.

Now it is scarcely possible to account for the hereditary ingenuity of megapodes as the mere result of instinct, if instinct be interpreted as unconscious automatism. Still more improbable is it that the birds act with a reflective knowledge that the material they collect will generate enough heat to save them from the tedium of incubation. Scarcely more satisfactory is the hypothesis that the ancestral megapode, happening to deposit her eggs on a mass of fermenting vegetation, found that she could leave them longer in such a position without their cooling to the death-point (a matter on which all British birds are intensely solicitous), and learned therefrom the trick of artificial heating. Such a ratiocinative connection of cause and effect far transcends the operation of instinctive automatism. Then how, except by assuming that the bird is obeying the mandate of some controlling and guiding Power, are we to account for the hen scrupulously placing her eggs in a vertical position in order to obviate

the necessity for turning them? It is to be noted that each generation of mound-builders would have to make these discoveries for itself, because, albeit nobody knows how precise and various may be the instruction imparted to its young by a bird which broods upon its eggs and sedulously attends to its chicks, the megapode mother undertakes no such duties. The young birds are hatched in her absence; they find their food and their way through the forest without her guidance. Nor can we get out of the difficulty by explaining mound-building as an imitation by young birds of the behaviour of their elders. 'The mound-constructing instinct,' says Mr. Savile Kent, 'is so strongly ingrained by heredity that young birds taken fresh from the nest, and confined under favourable conditions, have at once commenced to construct mounds after the characteristic manner of their tribe.'

The mystery of megapode intelligence seems too profound to receive explanation by ordinary evolutionary process. If the disciplined understanding of Lord Kelvin is forced by the contemplation of a spray of moss to apprehend the presence of a directing Power, humbler students in Nature's class-room may be pardoned for speculating about an ultimate external source of sagacity, common to men and other animals.

L

Reflections such as these land one plump in teleology—the deliberate design and adaptation of creatures and their organs by an external Power to a specific end; and this has fallen far out of favour as a key to the phenomena of animated nature; yet how hard it is to

The Yucca Moth

penetrate certain mysteries without presupposing a stage manager.

The American yucca is well known—the plant that sends up a cascade of ivory white bells from the centre of a sheaf of leaves like painted tin. It condescends to flower under our cloudy skies, but never bears seed in this country, not, apparently, because of our cloudiness, but for want of the offices of a little moth (*Pronuba*). The anthers in the yucca blossom are only half as long as the pistil, which has its orifice at the extreme tip, so that the pollen from the anthers can never reach it unless helped by external agency. *Pronuba* lays her eggs by means of a sharp ovipositor near the base of the pistil among the embryo ovules. But these ovules, upon which the moth's grubs depend for food, would never develop unless the pistil were properly fertilised. *Pronuba* is careful to attend to this. She enters a flower, collects a pellet of pollen from the anthers, flies with it to another flower, in the ovary of which she deposits her eggs, and then swiftly plugs the orifice of the pistil with the pellet of pollen brought from the other flower. A double purpose is thus effected; the flowers are cross-fertilised as is essential to the vigour of future seedlings, and the ovules, swelling into succulent seeds, afford provender to the young brood of *Pronuba*. The yucca depends for propagation on what the grubs leave untouched. In this complex process there is a distinct act of volition on the part of *Pronuba*, quite different from the casual transference of pollen from flower to flower on the hairy bodies of bees and flies. But science is dumb if you ask her how *Pronuba* learned her part; she can only report the performance.

LI

Eels

As a North Briton myself I might be suspected of partiality were I to claim that there is no more intelligent and practical peasantry in the world than the Scots; therefore I shall content myself by observing how closely they cling to certain kinds of prejudice, outworn in other communities. Of such is their aversion for eels as food. Every river and lake—the smallest burns also—contain great store of eels, yet you shall traverse the length and breadth of Scotland, nay, you shall live there for half a century, as I have done, and never see eels served at table unless by your express command. It was not ever so, for the reverend scribe who furnished the text to the maps of Galloway in Blaeu's admirable atlas in the seventeenth century, having described the great abundance of eels in that district, stated that the peasantry laboured to catch them in quantities and salted them for winter fare. He was a parish minister in Galloway, and was writing about what he knew. At the present day, a true Galloway man would as lief make his breakfast on rats as on eels. And in all Scotland I know of but one eel-fishery—that at the outlet of Linlithgow Loch, a survival from the days when Queen Mary's French *chef* taught the natives the true value of a neglected supply. Whence has arisen the almost proverbial dislike of Scotsmen to eels? Has religion had any hand in it? In days when the Church of Rome prevailed in the land eels, like other fish, were of high value to carry people over fast days. After the Reformation fish culture fell into disuse, and in Presbyterian Scotland, where divines were wont to enforce

obedience to the literal Scripture, a special ban seems to have fallen upon eels—partly, no doubt, because of their similitude to snakes, but probably more particularly because they fall under the Mosaic definition of what is unclean: 'Whatsoever hath fins and scales in the waters . . . them shall ye eat; and all that have not fins and scales in the waters . . . they shall be an abomination unto you.' The eel, by the bye, does possess scales, but these may have escaped observation by scrupulous divines, seeing that they are exceedingly small and deeply imbedded in the skin.

Now, seeing how greatly appreciated the eel is in England, it is strange that the practical Scot has not turned the abundance of that creature to better account. London imports many hundreds of tons of eels annually from Holland and Ireland, and doubtless could take an indefinite number more. I have seen it stated that the eel-fisheries of the Bann alone produce a rent of £2000 a year. Some day the Scottish peasantry may wake up to the partiality of their English compatriots for eels, and turn the abundance in their own waters to profitable account.

As with eels now, so it once was with blackberries. I was wont to deplore the lavish crops of this excellent fruit which used to be allowed to rot unheeded. Now it is different. Partly to supply jam factories, partly to meet the demand from dye-works, a regular seasonal industry has sprung up in 'black boyds,' as they call bramble-berries in my country, and hundreds of tons of this once-neglected product are sent south by rail every autumn.

The highly-educated modern specialist must often content himself with the vocables of untutored primitive

man, albeit the root-meanings of these may be far from scientific. Thus the common name 'eel' is but a contracted form of the scientific title of the fish—*anguilla*; and, by going far enough back, we can trace the meaning to be 'the choker,' which seems inapplicable enough to the habits of this slippery customer. It has come about in this way. In the remote past, Aryan man came to associate the sound *agh*, nasalised *angh*, with the idea of choking. That property in snakes which seems to have impressed him most was neither the poisonous fangs nor the forked tongue nor the prostrate posture, but the power of the largest of them to squeeze. So he came to denote the big snake as *aghi* or *anghi*, the choker, just as, by a similar mental process, modern men of science have designated it *Boa constrictor*—the choker *par excellence*. Smaller snakes required a diminutive appellation; hence the Sanscrit term *aghla* or *anghla*, appearing in Latin as *anguilla*, the diminutive of *anguis*, as in Greek the two words persisted in ἔχις and ἔγχελυς, respectively signifying a snake and an eel. In like manner, through all branches of Germanic speech—Anglo-Saxon, English, German, Icelandic, and so on—the eel is ineradicably 'the little snake'; and it is not every nation that has rid itself of repulsion for a creature which, in its very name, as well as by its appearance, stirs the instinctive horror for snakes which is born in every son of man. Of course, this is pure nonsense. Englishmen have discovered long ago that eels are palatable and nutritious food. Scotsmen, on the other hand, forego the legitimate profits that might be derived from eel-fisheries in every part of their land, and allow the Dutchmen to send over hundreds of tons of eels to the English markets.

Ever since man began to indulge curiosity about the lives of his humbler fellow-creature, the ways of the eel have been shrouded in much mystery. Aristotle, baffled in the attempt to solve the enigma of their reproduction, fell back on the unphilosophic theory of spontaneous generation—the outcome of putrefaction. Gesner (1516-1565) had no better explanation to offer; and even at this day many of our countrymen hold that you may create as many eels as you wish by steeping in water the hairs of a stallion. Yet who is there so unmindful of the slow growth of understanding as to smile at such superstition, seeing that, seven years ago, eels in the larval stage were scientifically classed as a distinct order, or at least, a distinct family, of fishes under the imposing title of *Leptocephalida*? It is true that Dr. Günther cautiously refused them a separate place in his system, but on grounds as far on the other side of truth as those of the ichthyologists who gave these little creatures generic rank. He considered that *Leptocephalida* were the abortive offspring of various kinds of marine fishes, perishing without attaining the character of the perfect animal. Not until 1896 did the Italian naturalist Grassi succeed in demonstrating that *Leptocephalus* was but the larval form of the eel, produced from eggs laid in the sea, probably pelagic, or free-floating, and crowding each spring into all our streams in the singular phenomenon of 'eel-fare.' These baby eels—elvers as they are called—are slender, semi-transparent creatures, two or three inches long, and appear in such prodigious numbers that I have seen a Scottish trout-stream slate-coloured with them from bank to bank for a distance of twenty or thirty yards. It is an example of Nature's lofty

heartlessness to the fate of individual lives, for it must be but a small percentage of elvers that escapes the voracity of birds and fishes at this tender stage. Man the omnivorous, of course, deigns to reckon elvers among his delicacies. Couch was told by a Cornish fisherman that he had seen at Exeter four carts loaded with these creatures, about twelve to the ounce. They are fried in lumps called elver-cakes, which Montague the ichthyologist described as peculiar in appearance from the number of little black eyes bespangling them.

Well, the *Leptocephalus* blunder has been wiped off the slate, yet we are far from mastery of the whole eel mystery. The elvers push up to the remotest inland waters — to Highland lochs and village duckponds, through the noblest river as well as the wayside ditch— but nobody knows how long they remain there before returning to the sea to spawn. Neither has it been observed that, once having so returned to the sea, they ever revisit fresh water. It is believed that eels remain in fresh water for an indefinite number of seasons, till the sexual and generative impulse makes itself felt and sends them seawards. There the organs of reproduction are developed with great rapidity and to such a degree that both sexes die from exhaustion after the act of reproduction. Nature is indifferent to their fate, for her law—increase and multiply—has been amply fulfilled. The ovary of a female eel thirty-two inches long has been estimated to contain no fewer than ten million seven hundred thousand eggs!

The fact that eels have continued to abound in the Thames during the sixty and odd years when it was hermetically closed by pollution against the ascent of

all fish from the sea, eel-fare included, has been used as an argument in support of the belief that eels can and do breed in fresh water. Yet it is scarcely possible that in doing so they can have eluded the vigilance of naturalists; the stock of Thames eels must have been recruited and maintained by way of the canal system which connects that river with the Severn. That they have not come through the Thames estuary is proved by the fact that it became impossible to convey eels alive from Holland, as was formerly done, in the wells of the vessel; for the Thames water poisoned or suffocated them. They are now brought over dead, in boxes.

LII

Snails and Slugs

Scant regard is paid to snails and slugs, even by the increasing number of persons who in this country give sympathetic heed to animals of humbler grade than themselves. Indeed, it is a rare thing to find an amateur in zoology who extends his observations beyond the vertebrate classes and the more conspicuous insect orders, such as butterflies and moths. I possess, it is true, an amateur friend who has contributed a good deal to what is known of centipedes, and that at the cost of harassing anxiety to his family. Of a truth, it is no light thing to be the wife of a specialist in centipedes. She learns to dread the arrival of boxes bearing foreign postage stamps by reason of the exotic arthropods of forbidding aspect they may contain, which, when they escape, as they often do, move swiftly upon an indiscriminate warpath. But I have never met with an amateur in molluscs. There

are shell-fanciers, of course, but theirs is not a serious science. They pay prodigious prices to fill gaps in their collections; £42 was paid recently for a single shell of *Conus gloria-maris*, and a like sum for *Cyprea guttata*; but of the strange inhabitants of these pretty tabernacles they reck little and know nothing. Yet even slugs are entitled to such consideration as is due to a family of so high an antiquity as to cause backbones to appear a mere afterthought. The Cambrian beds—oldest of stratified rocks — reveal about four hundred distinct species of mollusc.

It must be confessed that British land molluscs do not possess a captivating exterior. Their shells, when they have any, exhibit little of the fantastic or exquisite colour and form bestowed upon those of their marine congeners. Having but a single foot, huge in proportion to the entire creature, and placed, without the luxury of a leg, upon what ladies' tailors euphemistically call the 'lower chest,' locomotion can only be performed by a sliding motion, and such sliding is only rendered possible by the profuse secretion of mucus, whereby the animal's path is lubricated. Even so, speed is not a strong point in land molluscs. It has been calculated that the common British garden snail (*Helix aspersa*) can 'sprint' at the rate of one mile in about sixteen days and fourteen hours.

On the other hand, the strength of these humble creatures is amazing. It is recorded of an individual of the species last mentioned, weighing a quarter of an ounce, that it dragged up a vertical surface a weight nine times greater than its own. Another, weighing a third of an ounce, dragged along a smooth table a load

consisting of twelve reels of cotton, a pair of scissors, a screw-driver, a key, and a knife, weighing in all seventeen ounces, or more than fifty times its own weight. As Mr. A. H. Cooke observes in recording this feat, it was as if a twelve-stone man had drawn a load, not on wheels, of three and a half tons.

While some molluscs (*Pelecypoda*) have dispensed with a head, and get on very fairly without it, all our land molluscs have retained that organ, and some of them put it to good use. Darwin quotes the instance of two snails (*Helix pomatia*) which were placed in a small garden where there was no suitable food. One of these snails was sickly; the other climbed the wall into the next garden, where food was abundant. Nobody expected to see it back; but, behold! it returned in twenty-four hours to its invalid mate, whom it induced to start at once for the land of plenty. Here we have evidence of cogitation, resolution, memory, sense of direction, and affection, or at least solicitude for the welfare of another. And such solicitude is the more disinterested, in that every individual *Helix* consists of a complete domestic establishment in him—her—its—self. That is to say, it is hermaphrodite; and although snails comply so far with convention as to pair regularly, the close of the honeymoon is marked by both parents setting to work to see which can lay most eggs.

Many species of slug possess the faculty of spinning threads of their own mucus or slime, which they use in a manner which it is difficult to dissociate from intelligence. The tree slug (*Limax arborum*) not only can let itself down from branch to branch by means of such a thread, but can ascend again to the place whence

it started. This species, it has been noted, conducts its courtship suspended with the object of its affections in mid-air. A great spotted slug (*Limax maximus*), which is the largest of our British slugs, made its escape from a box where it was confined and travelled along the mantelpiece until it came to the edge. It then made a survey of the position, and, perceiving that to drop to the ground meant injury or death, proceeded to exude slime, whereof all the kind have an almost inexhaustible supply, which it worked with its foot into a slender rope, whereby the animal let itself gradually down till it alighted safely on the fender.

Still more complex is the mental process implied in the proceedings of certain slugs—species not mentioned—observed by Mr. R. Warner. The flowers of orchids, as cultivators know to their cost, have an irresistible attraction for these creatures; wherefore it is customary to bind cotton wool round the spikes as a protection. Mr. Warner had some fine plants of *Odontoglossum Alexandræ*, which were not only wadded in the usual way, but stood in pots surrounded by water. Baffled in direct approach to the delicious fare, many slugs ascended the rafters of the greenhouse, and let themselves down upon the blossoms by means of slime-threads. Here we have an exhibition of design as apparently intellectual as that of the ant-lion lava, which digs a pitfall in the sand, and, when a wandering insect comes to the edge of it, discharges a shower of sand upon the victim to bring it within reach of its powerful jaws. But, whereas the ant-lion is exercising an art or an instinct inherited from immemorial ancestors, greenhouses and orchids are novelties in the experience of British slugs, which display an unexpected faculty of

up-to-dateness. No doubt the explanation is partly found in the keen sense of smell which all molluscs are known to possess. The art of slime-spinning has been inherited as a means of making short cuts; the sense of smell, enjoyed in a degree which we, with our grosser faculties, can scarcely realise, acts as a clue to the direction in which the short cut is to be made, and the sense of direction Zeno held to be slight proof of intelligence. 'You fool,' said he to Euclid, 'why devote columns of manuscript to proving that two sides of a triangle are greater than the third. Any ass knows that without instruction. Tie a bundle of hay in the corner of a court, and see whether the beast will not make straight for it, instead of moving round two sides of the square!'

It must be confessed that, whatever be the intellectual qualities of molluscs, they exhibit no trace of conscience or moral sense. The common black fellow (*Arion ater*), which appears everywhere in numbers after a shower, is professedly vegetarian, but greedily devours any carrion he comes across, and cannot be trusted to keep his radula, or rasping jaw, off the bodies of his weaker brethren. Dr. Grey almost failed to find anything destructible which *Arion* would not eat; it devoured newspapers greedily, the bodies of five different species of slugs, and Pears's soap. But the last-named article was consumed without gusto, evidently under protest against the abnormal flavour, and without any intention of giving it an advertisement.

December

LIII

One may often hear a comparison made between modern medicine and surgery, greatly to the disparagement of the former science. Be it admitted freely that physicians can show nothing to rival the splendid advance which the adoption successively of antiseptic and aseptic methods has enabled surgeons to accomplish within living memory, still we have only to take account of the blind pranks which practitioners of old played upon their patients to thank God that we are no longer in the hands of such blundering blockheads as they. The Rev. Oswald Cockayne has edited for the Records Series a collection of primitive medical essays under the title of *Leechdoms, Wortcunning, and Starcraft of Early England*, and truly it would be difficult to compile a more convincing example of human folly. Many of the records prescribed seem worse than the diseases they professed to cure: unspeakably nasty, some of them, directing how the filthiest things on earth were to be pounded together and mixed with the patient's meat and drink, in a manner of which the slightest acquaintance with bacteriology and the history of internal parasites enables us to perceive the terrible danger; irresistibly ludicrous others, as when wise Abbot Ælfric (for he *was* wise in many things) directs as a remedy for headache

Primitive Leechcraft

a salve composed of forty-four 'worts' or plants, and the fat or bones of fourteen animals, to be rubbed on after repeating the Creed, the Magnificat, the Benedictus, and the prayer of the Four Evangelists.

Ælfric, of course, was only repeating what had been handed down to him from pagan forebears—*plus* the Christian anthems and prayers; nor were these pagan forebears, perhaps, so simple as we may suppose. The Germanic colonists, who proved strong enough to relegate the Celtic tribes of Britain to the 'fringe' they still enjoy, had not been wanting in brains. Their chief deity was Woden—a name cognate with our 'wit' and 'wisdom'—they worshipped him as the Almighty Wit—the Supreme Intelligence. To Thor—the mighty Thunderer—was assigned inferior rank to Woden—brute force they never imagined as a match for intellect. It is true they were of the same Teutonic stem which had overthrown the culture of Rome, and violently checked the current of civilisation for nearly a thousand years; it is true that we, their descendants, are wont to use their names—Goths and Vandals—to typify everything that is brutal and ignorant and coarse. Yet even among these Germans there were a few who were careful to preserve and hand down some of the ancient learning. They studied, and even translated, many works of Greek and Latin writers, and much of their leechcraft was derived from Hippocrates, Æsculapius, and Plato. But the ingenious and delicate surgical instruments, of which such a variety have been unearthed at Herculaneum and Pompeii, were unknown to them, or, if known, their use had been forgotten: surgical and medical science had to be reconstructed from the foundation.

One instrument, and one only, seems to have been common to all ages—the lancet. Down to fifty or sixty years ago blood-letting was indiscriminately prescribed and universally believed in. I possess a folio account-book of an ancestor who flourished when the eighteenth century was still young—most entertaining reading, by reason of his having made it a kind of journal also. Regularly, every spring and autumn for many years, recurs an entry such as this:—

'To a chirurgeon, for blooding my wife, Peggy, and me, and for giving Peggy a vomit, ... 28 *l.*'

Peggy was the worthy gentleman's daughter, and the fee was in Scots money.

But there is no need to go back so far for examples of ferocious practice in medicine. Seasonal blood-letting was reckoned indispensable till well on in the nineteenth century. George IV. was bled the day before his coronation, to fit him for the ceremony. His unhappy Queen, after being refused admission to Westminster Abbey on that occasion, drove sorrowfully home, and her agitation brought on liver disorder. Here is an account of the treatment to which she was subjected by the best London doctors of the day:—

'On Friday (the day after the coronation) last she lost sixty-four ounces of blood; took first of all 15 grains of calomel, which they think she threw up again in the whole or in part; and then she took 40 grains more of calomel which she kept entirely in her stomach; add to this a quantity of castor oil that would have turned the stomach of a horse. Nevertheless, on Friday night the inflammation had subsided, tho' not the obstruction on the liver.'[1]

[1] *The Creevey Papers*, vol. ii. p. 21.

It is small cause for wonder that within a few days of this discipline Queen Caroline breathed her last.

The Saxons used the lancet at frightful haphazard, except that they were positive about the right time of year. In an old leech-book written by one Cild (probably only a clerk writing from dictation) for the Abbey of Glastonbury, much stress is laid on the risk of blood-letting fifteen nights before Lammas (August 1st), and after it for five-and-thirty nights, because the 'lyft' (air) is then most impure. Herein is a trace of Mediterranean lore, from a latitude where men had learned to dread the sirocco. But there is an appalling vagueness in directions for the operation:—

'Let him blood from the left arm from the upper vein; if thou canst not find that [*gif thu tha findan ne mœge*], from the midmost vein; if thou canst not find that, then from the head vein. Further, if that cannot be found, let blood from the left hand, from a vein near the little finger. If the blood be very red or livid, then must it be let more plentifully; if it be clean or clear, let it so much the less.'

Evidently this eminent surgeon did not know the vital difference between arterial and venous blood, and his diagnosis was based on the quality of the blood, differing accordingly as he had tapped a vein or an artery!

It is horrible to think that blood-letting was pronounced indispensable in the 'half-dead addle,' as the Anglo-Saxons called paralysis, in order to draw forth the poisonous humours from the patient. This theory of humours died very hard in medicine; it drove bravely through the eighteenth century.

There was, of course, no distinction till long after the Norman Conquest between surgeons and physicians:

though the use of the catheter, the probe, the dioptra, and the forceps, all known to practitioners in classical times, had been forgotten, anybody could handle knife and saw. Therefore the directions are of the simplest how to proceed 'if thou wilt carve off or lop off a limb from a body' [*gif thu wille lim aceorvan othe asnithan*].

From time to time one stumbles on a bit of sound and solid sense, as when the writer is prescribing remedies for loss of appetite—a terrible calamity to overtake people from whom we derive our own unrivalled proficiency with knife and fork. A Saxon lord who refused his victuals must indeed, it was thought, be in parlous case—probably possessed of a devil or two; consequently a great variety of recipes are given to restore the appetite, among them one which looks curiously modern—'Let them seek for themselves fatigue in riding on horseback, or in a wain as much as they can endure.' Carriage exercise in a springless wain meant a more rigorous experience than a drive in Hyde Park on rubber tyres.

After all, the leeches of those days may not have been such fools as we are inclined to pronounce them. They wrote very foolish prescriptions, and some very nasty ones, but how much of them all did they believe? Is there any fashionable physician in London at this moment who will declare on his honour that he relies as much on the resources of the pharmacopœia as on the faith of his patients? How many modern doctors have the courage, when they recommend regimen rather than drugs, to reply as the famous Jephson did to Lady Londonderry? 'Sir,' she asked, scandalised at the severe simplicity of his orders, 'do you know whom you're speaking to?' 'Yes, ma'am; to an old woman with a disordered stomach.'

The Saxon leeches had very hazy ideas about the properties of herbs: it was certain, anyhow, that they had *some* properties, and the popular notion was that herbs were essential to any cure, so they complied with it, and added a lot of fantastic observances—partly *ex tempore* and partly derived from the world-wide and world-old doctrines of the Magi. Doubtless these complicated instructions contributed to convalescence. It requires little knowledge of human nature to perceive that a Saxon thane, suffering from prolonged over-feeding, would think very cheaply of the leech who ordered him to go bumping about on an underbred hack, or jolting for miles in a farm-cart: it was necessary to invent decoctions—the more nauseous the better—to beguile the patient's imagination. In short, leeches were *expected* to administer herb-potions, for such was the tradition of leechcraft from wiser times: it was sheer bad luck that the properties of the various herbs had been forgotten during ages of anarchy, and had to be slowly recovered by watching their effect upon patients.

Leeches did not hesitate to go beyond the vegetable kingdom in order to influence powerfully the minds of their patients. There is nothing that affects the imagination more violently than cruelty, and cruel some of these recipes undoubtedly are. Cataract, about the nature of which the leeches can have known absolutely nothing, was to be treated in this way. Catch a fox alive, cut out his tongue, and let him go; dry the tongue, sew it in a red cloth, and hang it round the patient's neck. As a precaution against pestilence, take a live badger and beat out his teeth, put them in a linen bag, and wear them next the body. For jaundice the sovereign remedy is

indeed an appalling one: you are to take the head of a mad dog, pound it, mix it with wine, and drink it.

It is sad to think that in the centuries since Pliny and Lucian mocked at the Magi all this rubbish had been allowed to accumulate and impede the ascent of man. The work had all to be done over again. Pliny had declared that of all earthly systems the doctrines of the Magi were the most fraudulent—not stupid, but fraudulent; yet even he inclined to believe that the popular notion could not be altogether groundless, that a man by eating roast hare improved his looks for nine days. 'Born a goddess, dulness never dies.' Be assured, it is far from dead yet. It lurks in privy places, waiting for some dislocation of our prodigious progress, some clouding of our splendid enlightenment, to spread its pall upon our faculties.

Sometimes one comes on a sample of it when least expecting anything of the sort. The turf is hardly firm above the grave of a certain man (one of the most intelligent and upright of his class that I ever knew) who once recommended me, as a cure for sty in the eye, to gather nine thorns from a gooseberry bush, burn eight of them to ashes, and prick the sty with the ninth. In another instance, which happened in my own parish within the last five-and-twenty years, may be recognised that principle of propitiation by sacrifice which lies at the base of all religion and its corruption—superstition. A certain farmer very well known to me, whose social standing may be understood from the fact that he was an elder of the kirk and paid about £300 a year in rent, wishing to rid his cattle of the disease known as 'blackleg,' caused a calf or stirk to be buried alive. Many persons were present at the ceremony, including the local veterinary surgeon!

It will be observed that this propitiatory notion, which runs through so much ordinary folklore, has very little place in these Anglo-Saxon prescriptions, most of which are purely empirical and arbitrary. It appears, indeed, in the directions quoted above for curing cataract, and in some of the recipes for the bite of a mad dog; but, as a rule, the cure was supposed to depend on the virtues of specified ingredients, modified sometimes by the hour of the day or the age of the moon. A few of these ingredients—mustard, aloes, colchicum, ginger, saffron, sulphur, mercury, etc.—remain in the modern pharmacopœia, their use having been well known to oriental and Roman physicians; their tradition had been preserved, but all understanding of their true properties had been lost in the general wreck of learning.

Sometimes the Saxon name actually preserved the true use of a wort—which had been perverted to other and probably futile purposes. Thus *Delphinium staphisagria*, staves-acre, was known to the Saxons as louse-bane, yet they recommended a drink of it to correct evil humours of the body. At this day there is no such sovereign cure for vermin in a dog's coat. Among herbs that may be reckoned neutral in effect betony was ever a prime favourite; in the herbarium of Apuleius it is recommended for no less than twenty-nine separate ailments—for tooth-ache, for sore eyes, for a broken head, for stomach-ache, for fatigue after 'mickle riding or mickle ganging,' for indigestion ('if thou wilt that thy meat melt easily'), for bite of an adder or a mad dog, for sore throat, or for 'foot-addle' [gout]. Hardly less popular was waybread [plantain], which must at least have furnished a harmless draught, disposing the patient to give an easy rein to his imagination.

Physicians, audaciously laying claim to superior powers, easily came to get credit for them, and became known as 'doctors'—more learned than the common folk. Some of them were so bold as to pretend to skill in many things beyond medicine. A curious medley of charms borrowed from the Magi and Christian prayers is associated with vivid scenes of early English pastoral life. Thus when a man had lost his cattle, which must have been a common occurrence in an unfenced country, the natural assumption was that some evil-doer had driven them off. He was directed to say his prayers three times to each quarter of the heavens, and then cry 'The Jews hung up Christ; they did of deeds the worst; they did that they could not hide. So may this deed be no wise hidden, through the Holy Rood of Christ.'

In proportion as the Church became all-powerful in human society, prayers became ingredients in prescriptions as commonly as any drug; and it was considered important that, like drugs, they should be 'exhibited' in proper proportions. Hence a table of equivalents was prepared as follows:—

One mass	was reckoned	equal to	twelve days'	fasting.
Ten masses	were reckoned	,,	four months'	,,
Twenty masses	,,	,,	eight months'	,,
Thirty masses	,,	,,	twelve months'	,,
One psalm	was reckoned	,,	one day's	,,
120 psalms	were reckoned	,,	twelve months'	,,

Happy the patient or criminal who could afford to pay for having psalms and masses sung!

Christianity, by the time it reached the pagan Saxons, had lost its pristine purity, and the light it shed on the physical world had become tinged with earth-born rays.

The Saxon convert was free to retain the fixed belief of his fathers in the presence everywhere of incorporeal spirits—evil and good. For him the forest-glade or river-cliff was still the haunt of the dreaded wood-mare, as he called the echo; and we have retained the term by which he personified the visitation apt to follow too generous a supper—a nightmare.

And thus men blundered on, using prayers and charms and herbs, sometimes hitting on something really useful and adding it to the store of sound knowledge. After all, we owe these venerable quacks something. *Somebody* had to begin the ascent: the lowest steps on the stair were very dimly lighted, and the first foot set upon them stumbled and wandered in a way we are apt to think supremely ridiculous; but no height could be gained without the help of these. Nothing is attained in science *per saltum*; little by little, line upon line, is progress made, till the light increases and the view broadens. In musing upon the lucubrations of these pioneers in leech-craft, one is disposed rather to admire the good purpose to which they put the dull wits of their patients, than to hold them up to derision for the preposterous remedies they prescribed. They were the Beechams and the Carters of the tenth century, and, on the whole, produced literature more exciting than that of our twentieth-century empirics.

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